AMATEUR RADIO

Vol. 33, No. 9

SEPTEMBER
1965

2/6

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OUR COVER

One of our draughtsmen, Ken VK3GK, gets his boy off to an early start. What makes it tick!

FEDERAL COMMENT

★

SHOULD WE ALL GO SINGLE SIDEBAND?

There seems to be a current misconception—quite widely spoken about—that all Australian Amateur transmitting licensees must change over to single sideband transmission by 1970. This is not true! It is true to say, however, that the 1959 Conference of the International Telecommunications Union did require fixed and mobile services operating in the frequency spectrum between 4 and 27 Mcs. to make the change by this date, and a sub-committee has been making investigations on this problem since the Conference. Whilst this decision included Commercial Services, it did not include the Amateur Service which, because of the nature of its experiments, investigations and research, is granted band allocations in which it is free to operate using most of the known modes of transmission and reception.

However, the matter prompted some thinking on whether we should all go single sideband or not. Naturally, many of the sidebanders—some of whom have been using the technique for 15 years—will tell every a.m. and c.w. operator to "get modern and cease using ancient systems."

Is this really what we want to do? Are we really right in thinking that we should dispense with all the older systems of communication in favour of single sideband? Is single sideband the ultimate from which every newcomer to Amateur Radio can gain experience and knowledge in exercising the privileges granted to him with his licence? Perhaps we should all take another look at this!

Certainly single sideband has proved to be a most useful form of transmission, particularly during the current condition of the sunspot cycle. And for sure it offers the advantage of "more-stations-per-kilocycle" when produced efficiently. But should we so upgrade this mode of transmission that the younger ones coming up behind us tend to lose interest in Amateur Radio because they (a) perhaps cannot afford the cost of s.s.b., or (b) become scared of the technical complicity compared with a.m. and c.w.?

Perhaps at this stage of the art we should do less preaching about "getting modern" and encourage our youth through every possible medium to take an interest in Amateur Radio at the lower level. The W.I.A. Youth Radio Scheme is doing this most successfully. Australia is in dire need of electronic engineers in every phase of the radio and electrical industry and Amateur Radio is a wonderful launching platform to send young people off on the right course to fit them for the posts available to those who choose electronics as a career.

Let us not become so sophisticated that we think only of the latest technique and that everyone should use it. By all means let us encourage the experienced Amateur to exploit new fields and keep abreast of progress in the art of Amateur communication. But we must not fail to also encourage the young people to graduate from simple a.m. and c.w. communication for it is the bulwark of our hobby no matter what technical advances are achieved at the ultimate. It is, perhaps, too early for all of us to go single sideband!

—Max Hull, VK3ZS, Federal President.

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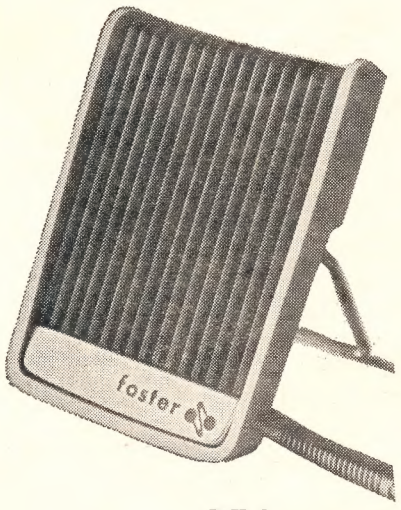

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A LOW NOISE FIGURE CONVERTER FOR TWO METRES*

C. J. HURST,† VK5ZHJ

RECENTLY Jeff VK5ZP, Tubby VK5NO and the author entertained thought of attempting 144 Mc. Moonbounce. One of the many obstacles crossing "easy street" was a converter having an acceptable noise figure. For Moonbounce a n.f. of 3 db. or less is most essential and first up a parametric amplifier was considered. However, due to the high tolerances required in the construction of same, it was considered that a conventional converter could achieve a comparable n.f. with less constructional difficulties.

Having decided on the construction, the choice of an r.f. amplifier was considered with valves in mind such as the 416B, 417A, A22521 and GE7077. Of these four valves the 416B and GE7077 have n.f.'s at 144 Mc. of 2 and 2.2 db. respectively. Because the 416B has to be "blown," it was considered that at a cost of 0.2 db. a GE7077 would be the logical choice as the r.f. amplifier. To obtain this published n.f. a grounded grid amplifier has to be used. In order to minimise mixer noise a triode mixer was considered desirable and a 6CW4 grounded grid mixer was our final choice.

To obtain a good match to the main receiver a cathode follower was considered necessary, hence the addition of another 6CW4. The oscillator injection was required to be as stable as practicably possible. To this end the transistor fundamental crystal oscillator is to be placed in a thermos flask for temperature stability. The output from this oscillator is then multiplied to the heterodyning frequency on one half of a 12AT7. However, oscillator chains usually depend on the individual constructor.

With reference to the circuit diagram it can be seen that the r.f. amplifier is a conventional grounded grid stage with the exception that additional capacity C2 was found necessary to give the plate coil L2 a good peak when C3 was tuned. Without C2 added, the plate coil was very broad with no definite peak in signal.

The plate coil of the mixer L4 is wound to resonate with the plate grid capacity of the mixer and capacity loading of the cathode follower, at the frequency of the i.f. used, which in this case is 26 Mc. The purpose of R4 is to broaden the tuning of L4. Generally L4 can be replaced with a resistor of approx. 47K as the mixer plate load, but in this case the coil was considered necessary to reduce images to a much lower level than considered necessary for general "Hamming." The length of co-axial cable connected from J2 to the receiver input should be a maximum of 24" long.

The tuning of this converter is no different from any other xtal locked converter, and should not present any problems. However, to obtain the lowest noise figure a noise generator is required to aid adjustment. By varying the tap on the input coil and tuning of same, the published n.f. can be obtained. To date the n.f. has not been measured for the converter described but in comparison with the 6ES8 cascode in service at this QTH a marked improvement is most apparent. In order to obtain the ultimate possible an additional 7077 grounded grid pre-amplifier has been constructed and added in front of the unit described. This pre-amplifier is identical to the r.f. amplifier described with the addition of a one-turn link coupled into the plate coil which feeds into the aerial input connector J1 of the main converter.

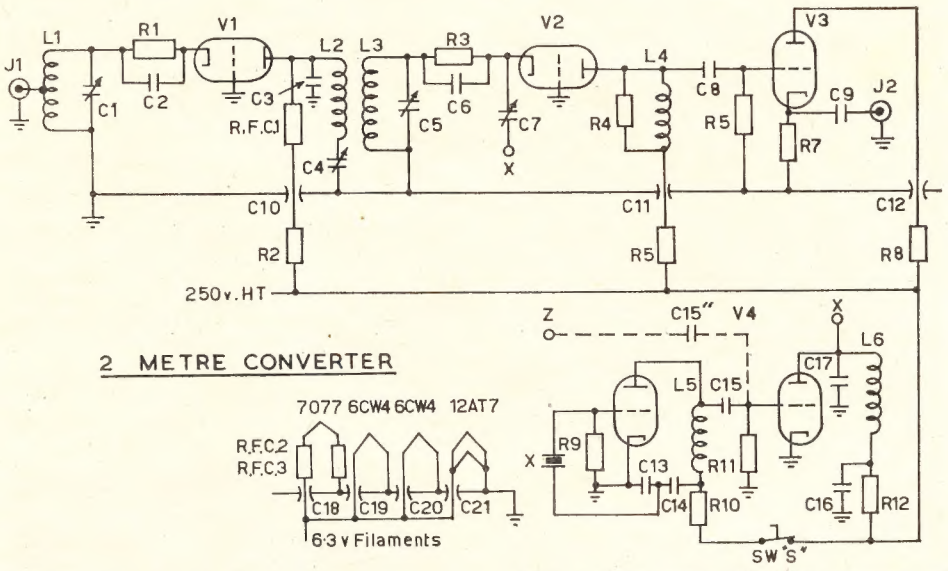
Although a GE7077 has been used as the r.f. amplifier in the unit described, no reason exists why any good v.h.f. low noise triode cannot be used —for example, 417A, A22521 or even a 6CW4, instead of a 7077 if one is not available. The only variation in circuitry will be the value to grid leak R1 and slight variations in valve capacities may necessitate a slight change in coil sizes. The coil information supplied will allow tuning of converter to frequency with little trouble. The use of a grid dip oscillator will make the adjustment of coils all that much easier. To facilitate construction a brass chassis was used. This allows you to solder components directly to the chassis, thus reducing long r.f. connections, and the chances of introducing instability.

A logical method of construction is to (after deciding on the layout):—

(1) Mount valve sockets and co-axial fittings.
(2) Solder feed-through capacitors and variable capacitors into position.
(3) Wire up filaments.
(4) Wire in resistors and capacitors.
(5) Wind and mount coils in correct positions.

It is generally wise to mount the coils last so as to prevent damage while constructing. At the completion of wiring, testing can be initiated. Firstly, the oscillator chain should be peaked up and the overtone oscillator checked for the correct mode of operation. The Robert Dollar overtone shown will work effectively with a 47 pF. feedback capacitor. Checking in a receiver either on the fundamental frequency or the 3rd harmonic of the fundamental will indicate the correct operation. As L5 is tuned to frequency, the fundamental will cease to be heard, and if listening to the 3rd harmonic, a decrease in frequency of approx. 20 Kc. will be evident, when the crystal is operating in correct overtone mode.

(Continued on Page 10)



R1—82 ohms ½ w.
R2—18K ohms, 1 w.
R5, R12—1K ohms ½ w.
R4—22K ohms ½ w.
R5—75K ohms 1 w.
R6, R9, R11—100K ohms ½ w.
R7—2.2K ohms 1 w.
R8—270K ohms 1 w.
R10—10K ohms 1 w.
C1, C4, C5, C7, C17—1-7 pF. variables.
C2, C9—220 pF. disc ceramic.
C3—4 pF. disc ceramic.
C6, C8, C13, C15—47 pF. disc ceramic.
C10, C11, C12, C16, C18, C19, C21—0.001 μF. feed-through's (preferably solder-in type).
C14—0.001 μF. disc ceramic.
J1, J2—Co-axial connecters.
X—Crystal to suit individual requirements.

RFC1, RFC2, RFC3—Maximum amount of turns of 28 B. and S. that can be fitted on 47K 1 watt resistor.
L1—7 turns ½ in. diam. x ¾ in. long, 16 s.w.g. tinned copper wire, tapped at 4 turns from cold end.
L2—6½ turns ½ in. diam. x ½ in. long, 16 s.w.g. t.c.w.
L3—3 turns ½ in. diam. x ½ in. long, 16 s.w.g. t.c.w.
L4—Tune to i.f. used, 28 B. and S enamel.
L5—To suit 3 x xtal frequency, 28 B. and S. enamel.
L6—To suit 144 Mc. i.f.
V1—GE7077.
V2—6CW4.
V3—6CW4.
V4—12AT7.

* Reprinted from "Info," January, 1965.
† 12 May Terrace, Gawler Rail, South Aus.

ANTENNASCOPE-54*

WILFRED M. SCHERER, W2AEF

THE Antennascope and Antennascope-54 are very simple radio frequency bridges for the measurement of antenna impedance and resonance. They may also be used for a wide variety of other measurements and the second part of this article will discuss this subject at great length.

As usual in bridge circuits, the variable element (R1) is adjusted until a zero null is obtained on the indicating device (Detector). Through the calibration of R1, the value of the unknown element, Rx, is found. Since the ratio arms, R1, R2 and R3, are resistive elements, the unknown Rx must also be resistive, or non-reactive, before an accurate balance can be obtained. The configuration of this simple bridge is shown in Fig. 1. The schematic of the improved Antennascope-54 may be seen in Fig. 2.

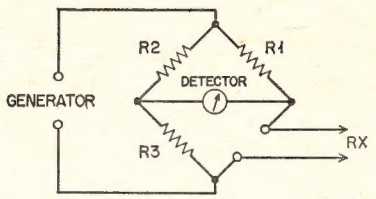


Fig. 1.—Fundamental bridge circuit. This is the basic idea of the Antennascope-54. Balance of the bridge is indicated by a null, or zero reading on the meter.

The impedance presented by an antenna is resistive only at resonance. The bridge in the Antennascope-54 cannot be brought to balance until the r.f. generator is at the resonant frequency of the antenna in question. Thus, the Antennascope-54 also provides a foolproof method of quickly and accurately determining the resonant point of any antenna. It is the working out of these two problems; i.e. radiation resistance and resonance, where the constructor will find the greatest value of the Antennascope-54.

The useful range of the Antennascope-54 is from 10 through 500 ohms. In the original unit this was covered by a single scale which resulted in those readings below 100 ohms being crowded. In this new improved model two scales have been provided. A "high" scale (R1a) with readings of good visibility from 50 to 500 ohms. A "low" scale (R1) with good readings of from 10 to 100 ohms. Values between 0 and 10 ohms, and 500 to 1,000 ohms, may be read through the use of external resistors.

The Antennascope-54 is designed to be used with a grid dipper as the r.f. generating source.

CONSTRUCTION

In the wiring schematic of the Antennascope-54 (Fig. 2) the only real critical components are R1 and R1a. Crystal sensitivity is also important and is discussed later on in this text.

* Reprinted from "CQ", June 1954.

● It is the ambition of each magazine editor to be able to look back upon a continuing series of notable contributions to the field of his journal. "CQ" has been fortunate to include on its staff the Ham that popularised the grid dipper and TNS, while adding the "antennascope" to the family of test instruments. After its introduction in 1950, the "antennascope" quickly became a necessity in many Ham shacks and is being manufactured by equipment companies.

The activation of many new Amateurs since 1950 has forcefully brought to our attention the fact that to many the "antennascope" is a mysterious device. With the depletion of back issues of "CQ" containing the original disclosure on the "antennascope" (September, 1950), no further material on its use has appeared in print.

It is also known that the mechanical design of the first "antennascope" left something to be desired. Electrically, although basically a simple design, it had never been up-dated to use the newer crystal detection diodes.

The "Antennascope-54" is a modification of the original instrument. The improved version is the result of several years of study on how and where it is used. We are sure you will find this article of interest.

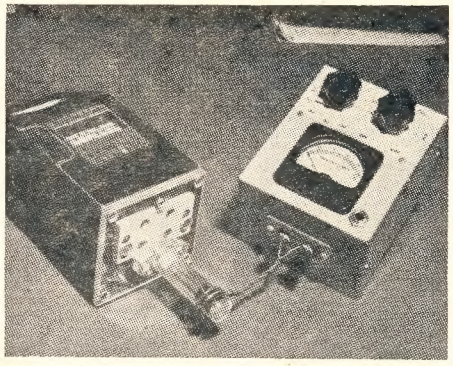
From an ideal aspect, R1 and R1a should be perfect non-reactive resistors, thus any-old-type potentiometer of the proper value will not work in this spot. Each potentiometer that we have used and measured has had some internal inductance and capacitance. Too much of either of these items will seriously inhibit the use of the Antennascope-54 on the higher frequencies.

The original model of the Antennascope employed a Centralab Type M composition potentiometer. Unfortunately, this control is not available on the general amateur market, although some companies have obtained a quantity on special orders. During the development of the Antennascope-54 we tried dozens of substitutes to find a suitable replacement. The next best thing to the Centralab potentiometer is the Allen-Bradley Type J, followed rather closely by the Ohmite Type AB. Either of these controls may be used for entirely satisfactory results within the useful frequency range of this instrument.

Before a potentiometer is soldered into this circuit it should be checked with an ohmmeter. Temporarily mount it with a scale so that the presence of backlash may be ascertained. Rotate the arm back and forth and note whether or not the identical ohmmeter readings occur at the same scale reading when approached from either clockwise or counter-clockwise rotation. In some controls the carbon contact in the slider arm may be loose. It can be tightened by crimping the mounting clip.

The range switch, Sw1, which is a new feature in the Antennascope-54, must be of the small slide type. Toggle and wafer switches cannot be used here.

Resistors R2 and R3 must be identical values and although shown in Fig. 2 as having a value of 200 ohms, they can be anything from 50 to 200 ohms —as long as they are identical. Another word of caution. Do not make the mistake of using the wire-wound resistor that physically look like their carbon brothers.



Antennascope-54 coupled to Grid Dipper.

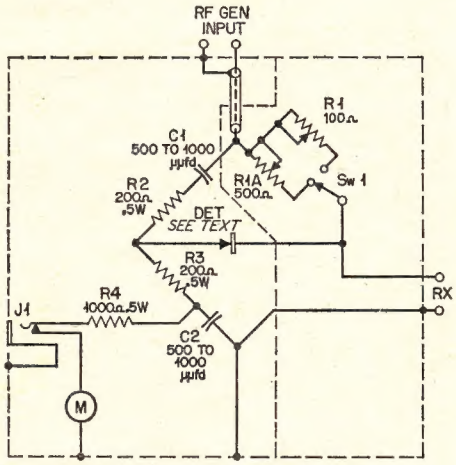


Fig. 2.—Wiring schematic of the Antennascope-54. In this model a range switch, Sw1, has been added. A jack, J1, is placed in series with the meter, although it is essentially unnecessary. Some constructors will find it useful for making readings somewhat removed from the actual position of the instrument.

C1, C2—(see text) must be identical values of from 500 to 1,000 pF.
J1—closed circuit jack.
R1—(see text) 100-ohm potentiometer.
R1a—same as above, but 500 ohms.
R2, R3—(see text) must be identical values of 50 to 200 ohms, non-inductive.
R4—1,000 ohms, ½w.
Det.—(see text) may be 1N23B, if mounting clip is constructed, or G7A if wire leads are desired.

Condensers C1 and C2 must also be matched to identical values between 500 and 1,000 pF. The button type ceramics are ideal for maintaining low inductance in their corresponding bridge arms. It is possible to use mica, disc or tubular ceramics in the Antennascope-54 if the instrument will never be used above 30 Mc.

CRYSTAL DIODES

The design of the original Antennascope was predicated on the use of the 1N23A diode. Since that time, the stability and sensitivity of that diode has been improved (1N23B) and a great number of crystal diodes are now on the market for use on u.h.f. t.v. Some of these are cheaper than the 1N23 series and have the additional facility of being easily mounted.

The comparative sensitivities as I have measured them during the development of the Antennascope-54 are as follows:

1N23B	100%	(Sylvania)
1N23A	95%	(Sylvania)
G7A	93%	(General Elec.)
1N58	65%	(Sylvania)
1N34	65%	(Sylvania)*
CK710	60%	(Raytheon)

* Very frequency sensitive and poor at the high frequencies.

Since the Antennascope-54 is to be used with a very low power r.f. source (a grid dipper) the eventual sensitivity will also depend upon the meter movement. A full-scale movement of 200 microamperes is recommended with an internal resistance of 1,000 ohms. The second part of this article will describe the Antennascope Junior which is built without a self-contained meter. This will further reduce the overall cost of this instrument by making use of the existing microammeter in your volt-ohmmeter.

MECHANICAL DETAILS

An "exploded" view of the Antennascope-54 is seen in Fig. 3. The unit is assembled in a box 3" x 4" x 5". An inner shield and shelf (B) is folded and drilled out as shown in Fig. 4. The box is also drilled and cut out as shown in the latter figure. Note particularly the irregular cutout in the left-hand view (A) which clears the binding posts (Rx) and range switch, Sw1.

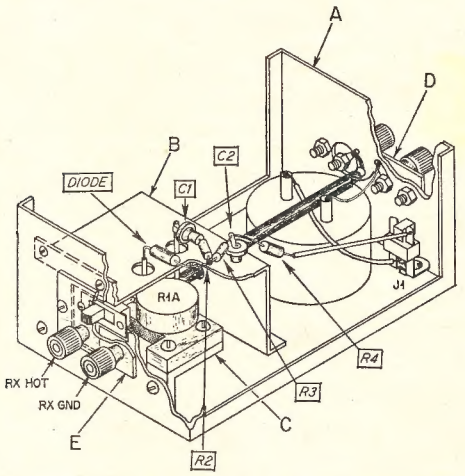
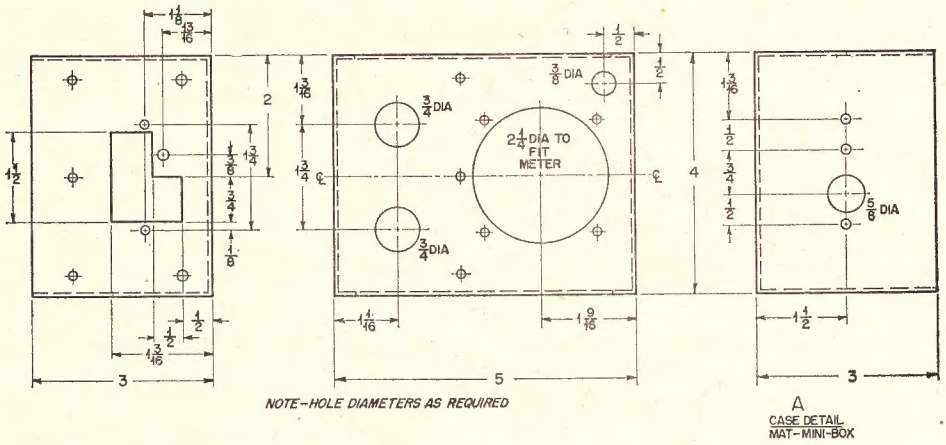
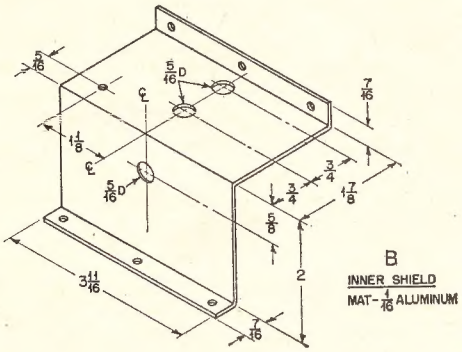
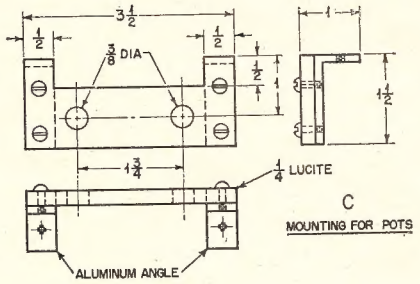


Fig. 3.—Wiring view of the Antennascope-54. The layout should be followed as closely as possible.







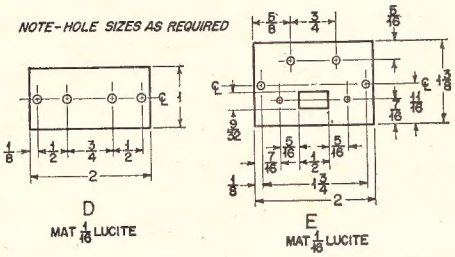


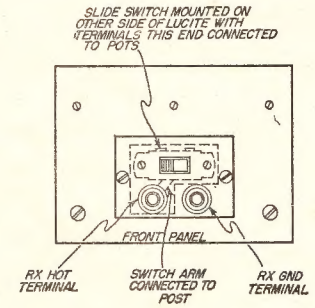
Fig. 4.—Box, shield and mounting bracket layouts and drilling dimensions.

The terminals for Rx are mounted on a piece of lucite (see part E of Fig. 4) which in turn is mounted over the cutout in the top of the box. The range switch, Sw1, is also mounted here to reduce any stray capacitance effects between elements of the switch and the box.

Controls R1 and R1a are then mounted directly under the Rx terminals on a ¼" thick piece of lucite. This insulating section is cut and drilled out as shown in part C of Fig. 4. The constructor must then drill two ¾" diameter holes in the front panel of the box to permit the shafts of R1 and R1a to pass through **without** making contact with the box frame. Use extension couplings if the original shafts are not long enough.

The terminals for the r.f. generator input are mounted at the bottom of the box. The "hot" lead is connected to a short length of R9-59/U which passes through the hole in the inner shield. The other end of the coaxial cable goes directly to R1 and R1a.

The connecting leads to the various components in the bridge arms must be made as short as possible to minimise inductance and to prevent stray


SLIDE SWITCH MOUNTED ON OTHER SIDE OF LUCITE WITH TERMINALS THIS END CONNECTED TO POTS
FRONT PANEL
RX HOT TERMINAL
SWITCH ARM CONNECTED TO POST
RX GND TERMINAL

Top view of the instrument.

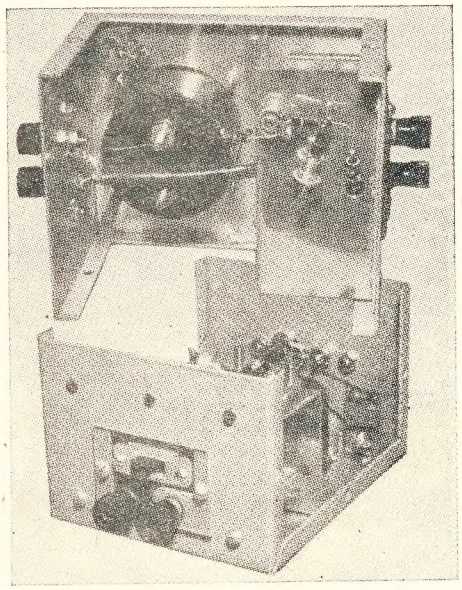
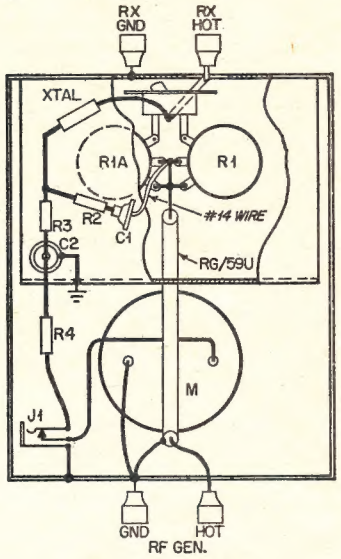


Photo views of the Antennascope-54.

coupling. Minimum lead length is especially important for the connections between the potentiometers and the range switch, and between the "hot" Rx terminal and the switch. For these reasons, R1 and R1a are positioned and mounted so that their terminals may be soldered almost directly to the switch tabs. The tab from the sliding arm of the switch is connected directly to a lug at the bottom of the "hot" Rx terminal.

The crystal diode shown in the unit in these photographs is a G.E. G7A. It is mounted in place with its own wire leads.

The various numbered and unnumbered figures and photographs in this article should clearly illustrate the wiring.



Wiring view and layout.

CALIBRATION IS EASY

The first step in calibrating the Antennascope-54 is to attach an accurate ohmmeter between the "hot" Rx terminal and the "hot" r.f. generator input terminal. Place the range switch to the left to engage R1 for the 10 to 100 ohm range. Mark out your scale on the face of the base (the design of which I leave to the individual) and divide it into steps of from 2 to 5 ohms.

Now slide the switch to the right to engage the higher range and subdivide the scale into steps of 25 to 50 ohms. Don't be startled to find that the potentiometers increase their resistances in opposite directions. Remember that R1, because of this mechanical layout, must be turned counterclockwise and R1a must be turned in a clockwise direction.

It should now be possible to verify these calibration points through a facsimile of an actual r.f. measurement. First couple the r.f. input of the Antennascope-54 to your grid dipper coil and put a 50-ohm resistor across Rx. See Fig. 5 for a general idea of how this is done.

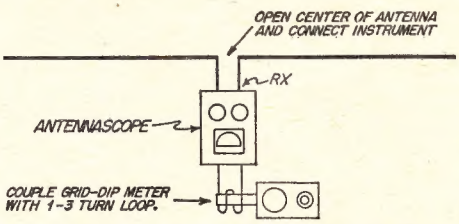


Fig. 5.—Basic use of the Antennascope-54.

Use a frequency from the grid dipper of about 20 Mc., and while it is oscillating put the range switch on the "low" scale and see if the 50-ohm value is being read. Move to the "high" scale and repeat to see if 50 ohms is also being read there. Rotate each control several times to find a scale value, and see if backlash is absent—it should be.

The readings should result in pronounced nulls on the meter. If only partial nulls other than absolute zero are observable, the Antennascope-54 is not working properly. Check first with a different value of test resistor since the first one might have been reactive. It is important to keep the leads very short during this test and that the resistor be non-reactive—oddly enough some are quite reactive.

Once a null has been found with a given resistor you will find that lead length can upset the balance. The leads of your test resistor must also be very short. Do not parallel connect resistors for testing the Antennascope-54—use non-reactive ½-watt single resistors.

Poor nulls can result from stray coupling effects in the Antennascope-54 but if the wiring and chassis layout is followed as shown in the figures this trouble should not arise. ●

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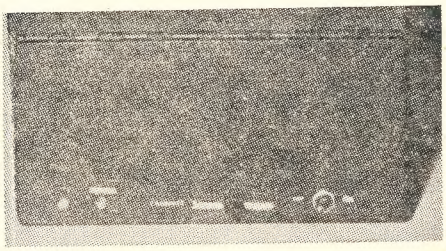
THE improvements that have been made in recent years in radio-receiver and transmitter oscillator stability have not lessened the need for frequency measurements of high accuracy. Particularly in the v.h.f. and u.h.f. ranges, reliable measurement, has, in fact, assumed even greater importance.

Amateurs interested in frequency measurement have long relied on the surplus BC-221 frequency meter because of its low cost compared to that of any other instrument of equivalent accuracy. Using the original calibration book, the excellent hermetically sealed 1-Mc. crystal oscillator, and the standard calibration points, an accuracy of 0.02 per cent. or better can be expected over the fundamental range of 2 to 4 Mc. By the use of intermediate calibration points and careful adjustment this accuracy can be easily increased to 0.01 per cent.

Measurements at frequencies higher than 4 Mc. are made by comparing the unknown frequency with harmonics of the fundamental 2- to 4-Mc. range. Even if the same percentage accuracy is possible at these harmonic frequencies, the absolute accuracy (in terms of cycles or kilocycles) deteriorates in direct proportion to the order of the harmonic used. An error of 0.01 per cent. at 2 Mc. is 200 cycles; at 200 Mc. it is a matter of 20 Kc. Greater absolute accuracies at the higher frequencies require that the percentage accuracy increase as frequency increases.



Controls along the bottom edge of the front panel of the BC-221 are for crystal-frequency trimming, the calibrate-operate switch, and the power switch.

A heterodyne system offers a method of accomplishing this objective. In such a system to be described, the unknown high frequency and a highly stable signal of known frequency are combined in a mixer to generate a beat frequency lying in the 2- to 4-Mc. fundamental range of the BC-221. If fixed marker signals are provided, spaced a intervals of 4 Mc. throughout the desired range, the unknown frequency will always lie within 2 to 4 Mc. of one of these markers. The BC-221 then is used as an interpolator measuring the difference between the unknown frequency and an adjacent marker. Assuming that the marker frequency can be determined with zero error, the absolute accuracy with this system is the absolute accuracy of the BC-221 at its fundamental. The percentage error in measurement of the unknown frequency is then the fundamental percentage divided by the order of the harmonic against which the unknown signal is beating.

● By making use of the harmonics of the highly stable crystal calibrator of the BC-221 in a heterodyne system, the accuracy obtained at frequencies up to 200 Mc. or higher is essentially that of the BC-221 in its 2-to-4-Mc. range.

REFERENCE MARKERS

In this modification, the original 1-Mc. crystal oscillator taken from the BC-221 is used as the primary source of reference markers. The required 4-Mc. spacing is obtained by means of the circuit shown in Fig. 1. Frequency is quadrupled to 4 Mc. in the plate output circuit of the oscillator. This signal is fed to a 4-Mc. amplifier which attenuates the 1-Mc. components, and other undesired products generated in the quadrupling process. The filtered 4-Mc. signal is used to overdrive a series of multiplier stages with broad-bank tank circuits and oversize coupling capacitors, each stage overdriving its successor. The result is a series of strong marker signals spaced at intervals of 4 Mc. throughout the desired range. By adjusting the crystal frequency so that one of these markers zero beats with WWV, the marker sig-

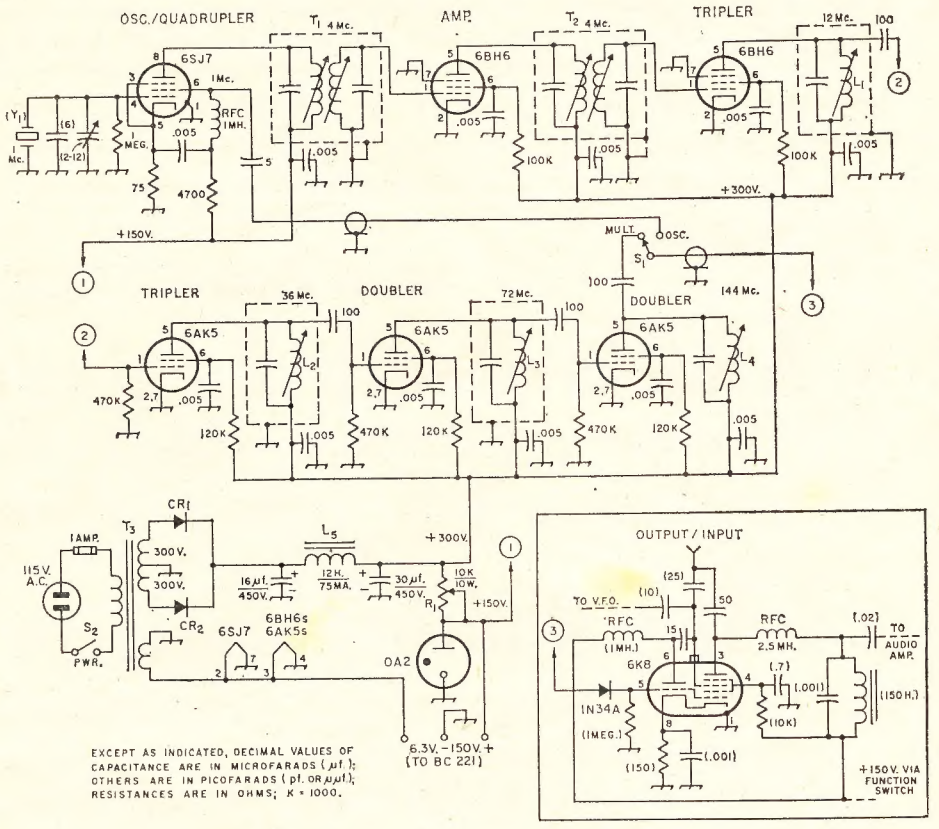


Fig. 1. Circuit of the 1-Mc. crystal oscillator and frequency multipliers which generate markers at 4-Mc. intervals throughout a wide spectrum. Fixed capacitors of decimal value are disc ceramic; others are silver mica or NP0 ceramic, except where polarity indicates electrolytic. Fixed resistors are ½-watt composition. Values in parentheses are the original. Inset shows modifications in the original mixer circuit.

CR1, CR2—Silicon rectifier, 10000 p.i.v., 100 mA. or more.

L1-L4, inc.—Circuits should resonate at the frequencies indicated. Coils may be air-wound, or wound on adjustable iron-core forms, and used with or without shunting capacitance. Capacitors, if used, should be silver mica or NP0 ceramic. Approximate inductances required when no shunting capacitors are used are as follows: L1—12μh., L2—1.3μh., L3—0.3 μh., L4—0.1 μh.

L5—12-hy. 75-mA. filter choke.

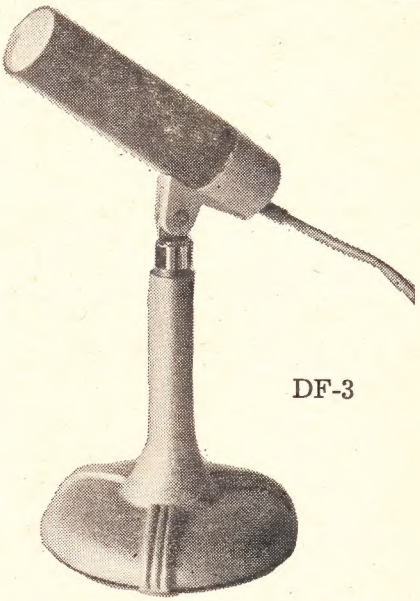
R1—Slider adjustable.

S1—S.p.d.t. rotary switch.

S2—S.p.s.t. toggle switch.

* Reprinted from "QST," December, 1964.

FOSTER DYNAMIC MICROPHONES



DF-3

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Effective output level .... —55 db. [0 db. = (one) 1V. Microbar]
Frequency response .... 50 to 15,000 c.p.s.

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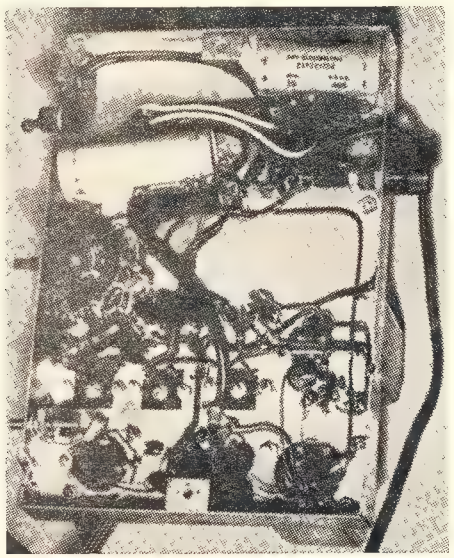
nals can be set with a high degree of accuracy.

The unknown frequency and marker frequencies are combined in a modification of the original BC-221 mixer. As described, the unit is designed to make measurements in the range of 2 to 300 Mc. In some other similar units, the range has been extended to 600 Mc., although the 4-Mc. points become increasingly difficult to identify. S_1 provides a means of feeding the 1-Mc. crystal signal directly to the mixer for calibration purposes.



Bottom view of the oscillator-multiplier chassis. The crystal-oscillator trimmer is in the lower left-hand corner. The crystal-oscillator screen r.f. choke is close to the 6SJ7 socket under the bottom-plate bracket at bottom centre. L4 is immediately below S1 at left centre. The three controls at the left extend through holes cut near the bottom of the front side of the BC-221 cabinet.

POWER SUPPLY

A small power supply is included. This provides about 300 volts for the multipliers, and regulated 150 volts for the crysal oscillator and the circuits of the BC-221, as well as filament voltage for both. The original 6X5GT tube rectifier shown in the top view photo was eventually replaced with silicon diodes to reduce heating.

MIXER MODIFICATION

The inset in Fig. 1 shows the simple modification of the original mixer circuit. The triode section of the 6K8 is used as an untuned amplifier for the signal from the multiplier chassis. This revision requires the addition of only the diode and the 15-p.f. coupling capacitor after removal of the crystal and its trimming capacitors. The diode serves to accentuate the harmonics.

The hexode section of the tube is unchanged except for the insertion of a 2.5-mh r.f. choke in the plate circuit to provide an r.f. load, and the addition of a 50-p.f. r.f. coupling capacitor between the plate and the output jack.

CONSTRUCTION

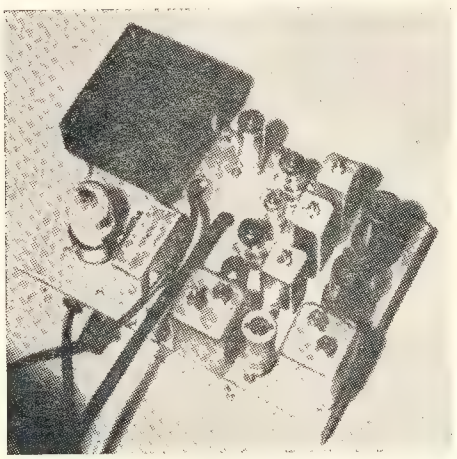
The components indicated in the main diagram of Fig. 1 are mounted on a chassis whose dimensions are proportioned to fit the bottom part of the BC-221 cabinet. Sufficient space for the chassis is provided by drilling out the rivets and removing the headphone compartment.

The essential details of the layout are visible in the photographs. The 1-Mc. crystal, its socket and associated trimming capacitors are removed from the BC-221 proper and remounted on the new chassis. It will be noticed that power-supply components and the crystal oscillator are at opposite ends of the chassis to reduce heat transfer and hum pick-up. Holes in each side of the case provide ventilation.

MAKING MEASUREMENTS

Practice with a few signals of known frequency and an accurately calibrated receiver to identify the 4-Mc. markers will soon show the utility and limitations of the system. To set up for a signal output at some desired frequency, a simple procedure should be followed. To create a signal at a desired frequency, the nearest crystal marker removed at least 2 Mc. from the desired frequency should be used as the reference. If the desired frequency is 157.71 Mc., the 160-Mc. marker should be used. (The 156-Mc. marker is closer, but is less than 2 Mc. away from 157.71 Mc., and therefore the beat will fall outside the 2-4 Mc. range of the BC-221.) The difference between 160 and 157.71 is 2.29 Mc., which (in my case) corresponds to a dial reading of 879.3. The nearest calibration point shown in the calibration books is 795-1 to which the dial should be set. With the 1-Mc. calibrator signal injected, the frequency meter correction knob is adjusted for zero beat. Then, shifting the mixer drive to the multiplier chain and setting the meter dial to 879.3 will produce a signal at the desired frequency.

For quick reference for this and other much-used frequencies, notations similar to the following are made:



The crystal-oscillator and frequency-multiplier unit for the BC-221. In the row to the right, from top to bottom, are the 1-Mc. crystal, 6SJ7 and T1-Three of the four multiplier coils are in the sheilding cans in the next row, with the 6BM6 4-Mc. amplifier tube at the bottom. The fourth multiplier coil (L4) is mounted through a hole in the chassis, largely hidden by the shielding can at the top. (See bottom view.) The four multiplier tubes and T2 are in the third row. Power-supply components occupy the remainder of the chassis. The coaxial line feeds signals from S1 to the mixer in the BC-221. The multiconductor ribbon makes the power connections.

Frequency — 157-710.
Meter Frequency — 2290.
Meter dial setting — 879.3.
Nearest check point — 795.1.

In measuring the frequency of an externally generated signal, it is assumed that other means are available for checking the frequency to an accuracy sufficient for determining the marker frequency that will serve as the reference. The signal is then fed into the BC-221 and, with headphones plugged into the meter, the meter is tuned for zero beat with the beat signal that results when the incoming signal is mixed with the marker. If the nearest marker (removed a minimum of 2 Mc. from the unknown frequency) is above the unknown frequency, as in the example given above, the BC-221 frequency reading should be subtracted from the marker frequency to obtain the value of the unknown frequency. If the marker signal is below the unknown frequency, the meter frequency reading should be added to the marker frequency. This condition would exist if the unknown frequency were, for example, 158-7 Mc. In this case, the unknown frequency is less than 2 Mc. from 160 Mc., but more than 2 Mc. from 156 Mc., so the latter would be the reference.

In measuring externally generated signals, care should be taken to attenuate the signal to a point that will assure that the mixer is not being overdriven. Too strong a signal may result in spurious responses from extraneous mixing with other harmonics of the BC-221, crystal harmonics, or with strong local broadcast or other signals.

If stronger marker signals are desired at the lower frequencies, they can be obtained by using a switch with more positions at S_1, and coupling through a 10-p.f. capacitor to the plate of each multiplier tube. ●

TECHNICAL ARTICLES

Readers are requested to submit articles for publication in "A.R.," in particular constructional articles, photographs of stations and gear, together with articles suitable for beginners, are required.

Manuscripts should preferably be typewritten but if handwritten please double space the writing. Drawings will be done by "A.R." staff.

Photographs will be returned if the sender's name and address is shown on the back of each photograph submitted.

Please address all articles to the
EDITOR "A.R.,"
P.O. BOX 36,
EAST MELBOURNE, C.2,
VICTORIA.

SIDEBAND ELECTRONICS ENGINEERING

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We are now Australian distributors for these American Amateur products.

- **GALAXY Electronics Transceivers.**
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- **AUTRONIC fully Automatic Keyers.**
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- **GONSET V.H.F. Transceivers.**
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FURTHER WE HAVE IN STOCK:

Swan SW-350 Transceivers with selectable sidebands added. £220 plus S.T.

Turner and **Zephyr** PTT ceramic Microphones, £5 and £10.

Jackson Bros. (London) components.

Used Swan SW-120 20 m. Transceivers, £90 and £100; same tri-banded for 80/40/20 m. full coverage, £125.

240 v. A.C. heavy duty power supplies, with built-in speakers, 6 x 10 x 11", all voltages for Swan, Galaxy or other Transceivers, silicon diodes and separate 800 v. supply transformer, £32 plus S.T. Save £10 for a kit of components and assemble it yourself!

Indent orders accepted for all types of American equipment with substantial savings in landed costs.

Profit making is not our primary purpose, service to the Amateur fraternity comes first!

CONVERTER FOR 2 MX

(Continued from Page 3)

Once the oscillator chain is functioning correctly, the remainder of the circuitry can be peaked up using either

(1) A strong local signal—which is not hard to come by around this area;
(2) The 2-metre beacon situated at Mt. Lofty on 144.8 Mc., or
(3) Band noise or a noise generator.

Providing that careful layout has been adopted, grid and plate leads kept short, and good shielding placed between stages, instability problems should be non-existent and alignment should present few problems. The optimum spacing of L2 from L3 is approx. ⅜". Closer coupling brings about heavy loading on the mixer, which is characterised by a drop off in gain and tendency to load down L3 to the extent that adjustment of C5 does not result in a definite peak in signal.

With regards to the circuit, switch S is used to disconnect the overtone oscillator when stabilised signal (as mentioned previously) is fed to multiplier at point Z. For general purposes this function can be ignored, but was an added requirement for the Moon-bounce project.

Regardless of the r.f. amplifier used, the mixer and cathode follower section of this converter provides the foundation of an exceptional unit compared to the equipment in use within VK5 today. If any club member requires any more information regarding the construction or operation of a converter similar to this unit, I am only too willing to assist, either on the air or personally.

FOOTNOTE

Since writing this article the author has had the opportunity to check the n.f. of the converter described. The basic unit described has a minimum n.f. of 4.5 db. This figure would be acceptable even to the most fastidious of 2-metre operators. However, with the addition of another 7077 r.f. amplifier placed in front of the basic converter unit the n.f. of the total system is 2.5 db. Compared with the published value of 2.2 db. it would appear that the value obtained is the ultimate practicably obtainable. Factors of importance when checking the n.f. of a converter with a noise generator are that firstly, the a.v.c. on the main receiver is disabled, and secondly, the r.f. stages on the main receiver are operated in the linear region of valve characteristics.

As mentioned previously the position of the aerial tap on L1 determines to a large extent the n.f. When using the noise generator it was found that varying the aerial tap 1 turn higher or lower than optimum degraded the noise factor by 2 db.

The adjustment of the aerial coil tap is a long and tedious job, and any person hoping to achieve the best n.f. in five minutes can take my advice and forget about it. Results obtained from this converter to date have exceeded expectations, and it is anticipated that within a few months the effort required to build the converter and pre-amplifier to the tolerances required will be well rewarded when a signal bounced off the moon is copied "loud and clear" using this converter. Here's hoping anyhow. ●

Presentation of I.R.E.E. Pennant (1964) to Westlakes Radio Club by Secretary and Chairman of Newcastle I.R.E.E., on 13th June, 1965, at Westlakes Hunter Branch Field Day (referred to in notes, July, 1965). L. to R.: Max McLachlan (Club Treas.), Keith Howard VK2AKX (Club Pres.), Henry Schroeder (Club Secy.), John Clarke VK2DZ (Secy., Newcastle I.R.E.E.), Chris Cowan VK2PZ (Chairman, Newcastle I.R.E.E.).
Block by courtesy "Newcastle Courier."

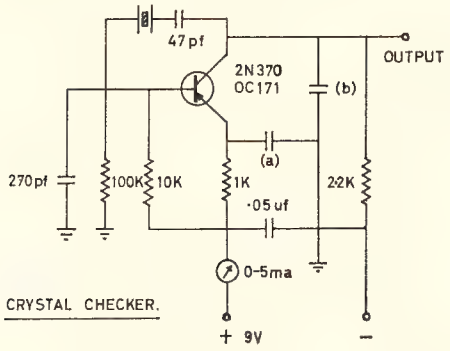
Technical Correspondence—

TRANSISTORISED CRYSTAL CHECKER

Editor, "Amateur Radio," Dear Sir,—I wish I knew where I could take my crystal checker and browse through piles of crystals at 10 c. each! Perhaps Mr. Marriner's article should have been cut to reflect Australian conditions, and to prevent too much drooling at the thought of those "carloads" of crystals.

Actually, what upset me most was his condemnation of transistorised checkers as critical and limited in frequency range.

Here is a circuit, originally appearing in "Transistor Transmitters for the Amateur," by Howard W. Sams & Co., guaranteed to resonate any active fundamental crystal between 100 Kc. and 15 Mc. Although not having any 100 Kc. rocks lying about to try it out to its lower limit, I can vouch for its performance down to 455 Kc. and up to 30 Mc. on overtone crystals.



CRYSTAL CHECKER.

Range	(a)	(b)
100 Kc. - 15 Mc.	.05 μF.	270 pF.
to 30 Mc.	68 pF.	22 pF.

If the 47 pF. capacitor is replaced by a 5-55 pF. trimmer, output from collector can be tapped off for use in calibrating your receiver with 100 Kc. rock.

—Peter Ward.

THE NEW "A.R."

LOG BOOK

IS NOW AVAILABLE

Larger, spiral-bound pages with more writing space.

Price 7'6 each

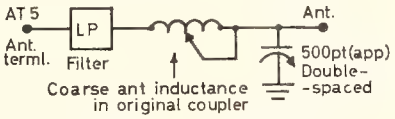
including Postage

Obtainable from your Divisional Secretary, or W.I.A., P.O. Box 36, East Melbourne, C.2, Victoria.

Antenna Coupler for your AT5 and go on 160 as well

When I bought my AT5 the antenna coupler had been ratted to such an extent that it was of no use to me. The only parts remaining were the coarse antenna inductance and a double-spaced tuning capacitor of about 500 pF., which may or may not have been in there originally.

After much mucking about I wired the thing to the following circuit. It has many advantages, the greatest being that it will match any impedance of unbalanced line; it is practically a pi-coupler, as you can see, when used in conjunction with the existing AT5 tank.



I constructed it in the original coupler box and tied it to the AT5 via about 6 feet of 50 ohm co-axial, and just to be safe I put a low-pass filter in the middle of the line. (I have never operated in anywhere else but fringe areas; the circuit I used is in A.R.R.L.)

Tuning up is a two-handed operation, dip the tank, adjust the loading condenser. If it does not load heavily enough, try a different value of inductance and re-dip. Just like any pi-coupler.

Okay, to go on 160 with the AT5, screw in the trimmer condenser on the v.f.o. 2-2.5 Mc. range until it hits the 1.8 Mc. band. Rip out all of the wiring on the m/f. m.o. tuning condenser. There is some underneath, don't miss that. Now, run a wire across to the h/f. buffer/amp. tuning condenser. Okay, you are now on 160.

To tune, put in max. cap. on the h/f. b.a. tuning and tune with the m/f. m.o. condenser that was (this condenser will only be used on 160, on all other bands it must have all its capacity out). You will now find that tuning down to the 2 meg. end on the tank condenser you should dip the final. If this doesn't happen it usually means that the antenna is not long enough.

You meet some mighty nice people on 160.

—Brian J. Warman, VK5BI.

AUSTRALIAN S.W.L. CENTURY CLUB AWARD

Objects.

1.1. This award was created in order to stimulate interest in logging DX in Australia, and to give successful applicants some tangible recognition of their achievements.

1.2. This award, to be known as the "S.W.L. Century Club Award," will be issued to any resident Australian Short Wave Listener who satisfies the conditions following:—

1.3. A certificate of the Award will be issued to any applicant who produces proof of having logged 100 countries, and will be endorsed, as necessary, for loggings made in respect of one type of emission.

Requirements.

2.1. Verifications are required from 100 different countries shown in the official "Australian DXCC Countries List."

2.2. The official countries list will be published annually in "Amateur Radio," and will be amended from time to time as required. Should a country be deleted from the list at any time, members and intending members will be credited with such country if the date of logging was before such deletion.

2.3. The commencing date for the award is 1st January, 1966. All loggings made on or after that date may be included.

Operation.

3.1. Loggings must be made in the h.f. band (Band 7), which extends from 3 to 30 Mc. but each logging must only be made of stations operating in the authorised Amateur Bands in Band 7.

3.2. Loggings may be made of any authorised type of emission for the band concerned.

3.3. Credit may only be claimed for the logging of stations using regularly-assigned Government call signs for the country concerned.

3.4. Loggings of ship or aircraft stations will not be allowed, but land-mobile stations may be claimed, provided their specific location at the time of logging is clearly shown on the verification.

3.5. All stations must be logged from the same call area by the applicant.

Verifications.

4.1. It will be necessary for the applicant to produce verifications in the form of QSL cards, or other written evidence, showing that specific loggings have been made.

4.2. Each verification submitted must be exactly as received from the station whose signals were logged, and altered or forged verifications will lead to the rejection of that card, and may lead to the disqualification of the applicant.

4.3. Each verification submitted must show the call sign, the date, and the time of contact, type of emission and frequency band used, and the location or address of the station at the time of logging.

4.4. A check list must accompany every application setting out the following details:

4.4.1. Applicant's name and Listener number, if any, and whether a member of the W.I.A. or not;

4.4.2. Details of any special endorsement involved;

4.4.3. Details of each contact as required by Rule 4.3;

4.4.4 The applicant's location at the time of each logging if portable/mobile operation is involved;

4.4.5. Any relevant details of any contact about which some doubt may exist.

Applications.

5.1. Applications for membership shall be addressed to the "S.W.L. Awards Manager," G.P.O. Box 2611W, Melbourne, Victoria, accompanied by the verifications, check list and sufficient postage for the return of the verifications, registration being included if desired.

5.2. A nominal charge of 25 c. (2/6), which shall also be forwarded with the application, will be made for the issue of the certificate to successful applicants who are non-members of the Wireless Institute of Australia at the time of application.

5.3. Successful applicants will be listed periodically in "Amateur Radio." Members of the S.W.L.C.C. wishing to have their verified totals, over and above the 100 necessary for membership, listed, will notify these totals to the "S.W.L. Awards Manager" in writing.

5.4. In all cases of dispute, the decision of the "S.W.L. Awards Manager" and two officers of the Federal Executive of the W.I.A., in the interpretation and application of these rules, shall be final and binding.

5.5. Notwithstanding anything to the contrary in these rules, the Federal Council of the W.I.A. reserves the right to amend these when necessary.

—Eric W. Trebilcock, L3042/BERS195, W.I.A. "S.W.L. Awards Manager."

THE 20th ANNUAL FEDERAL CONVENTION OF THE W.I.A.

The 1965 Federal Convention was held in Melbourne during April and it is perhaps appropriate some months later to make some comment in these columns and to indicate what has occurred as a result of the Convention.

Those of you who are well versed in the administrative organisation of the Institute will know reasons for holding a Federal Convention, but for those who are new to the W.I.A., Federal President Max Hull's editorial in the June, 1965 issue of "A.R." makes it clear that the Convention is the place where Divisional Federal Councillors get together as a Federal Council to consider the policy of the Institute and to instruct Federal Executive how to act on its behalf in the year to follow.

Members attending the 1965 Convention were:

Major W. T. S. Mitchell, VK3UM, Federal President;
Mr. G. M. Hull, VK3ZS, Federal Vice-President;
Mr. P. D. Williams, VK3IZ, Federal Secretary;
Mr. P. J. Healy, VK2APQ, VK2 Delegate;
Mr. K. H. Howard, VK2AKX, VK2 Observer;
Mr. M. J. Owen, VK3ZEO, VK3 Delegate;
Mr. J. B. Battrick, VK3OR, VK3 Observer;
Mr. K. E. Pincott, VK3AFJ, VK3 Observer;
Mr. L. Blagborough, VK4ZGL, VK4 Delegate;
Mr. G. M. Taylor, VK5TY, VK5 Delegate;
Mr. P. M. Williams, VK5NN, VK5 Observer;
Mr. H. Roberts, VK5MY, VK5 Observer;
Mr. R. Chamberlain, VK6RY, VK6 Delegate;
Mr. L. A. Machetti, VK6ZDM, VK6 Observer;
Mr. E. J. Cruise, VK7EJ, VK7 Delegate.

In addition many other Amateurs were present at various times to listen to the discussions taking place.

After receiving the minutes of the 1964 Convention and discussing officers' reports on activities of the previous 12 months, Federal Council bent itself to the task of considering the large number of constitutional, policy, administrative, regulatory, contest and general business items that were on the agenda.

Constitutional matters discussed embraced the preparation of Convention agendas, the appointment of Federal Executive, Divisional membership levels, improved liaison between Executive and Divisional Councillors and the exact role to be played by Federal Executive in the future. Discussion on these subjects was always frank and open and from them came a much clearer understanding of the way in which the Institute would operate in the forthcoming year.

The policies to be adopted by the Institute then came under review and the items considered were reciprocal licensing, reports from F.E., terms of office of Federal Councillors, minimum age limits for A.O.C.P. and L.A.O.C.P. aspirants, badges for Honorary Life Members, the use of sideband in relation to Amateur activities and the venues for the 1966 and 1967 Federal Conventions.

It is of interest to note that the policy of the Institute to press for reciprocal licensing facilities met with major success on the 25th June this year, when Notes of Agreement to establish reciprocity of Amateur licensing privileges were signed between the United States and Australia.

When administrative matters were raised many facets of this phase of the Institute's activities were aired. These included the purchase of sideband equipment for F.E., the establishment of a Federal Reserve Fund, the best publication date for the Call Book, W.I.C.E.N., Divisional slow morse transmissions, the re-establishment of the Federal Communications net and mutual interference between official broadcasts and nets in the various States.

On regulatory matters the subjects of sideband power and measurement, the use of call signs, additional classes of licence, the issue of call books and the granting of high power permits came under review. As a direct result of the outcome of these deliberations, F.E. has prepared and presented a long and detailed memorandum of submissions to the Department and is currently engaged in the sometimes delicate task of ensuring that Amateur privileges are not only maintained but improved. In the submissions to the authorities special emphasis was given to the status of the Amateur in Australia and to power limits for sideband.

Contests and awards are subjects dear to the heart of the Amateur and it is not surprising that considerable attention was paid to them by the delegates. The appointment of an awards manager, the prompt presentation of trophies and certificates, the dates of national contests, the possible modification of contest rules, the vetting of QSL cards and the location of the contest committee all came under review. It is pleasing to report at this time that all the decisions made regarding contests have been implemented.

Matters of general business were the last to be deliberated and were many and diverse. They covered the growth, status and financing of the Youth Radio Scheme sponsored by the Institute, the present situation of the proposal for Federation, the purchase of photo copying equipment for F.E., the appointment of an "Oscar" project co-ordinator, the presentation of "Federal Comment" in "A.R." and finally, the establishment of a financial operating budget for 1965/66.

It can thus be seen that the 1965 Convention—like its predecessors—was not exactly a holiday in spite of the fact that it was held over the Easter holiday period. Proceedings started after lunch on Good Friday and went on morning, afternoon and evening until after lunch on Easter Monday. The only breaks taken by the delegates were to attend the Convention Dinner on the Saturday evening and to attend a picnic meal in the Dandenong hills orgainsed by the VK3 Division on the Sunday afternoon.

The importance of this, and other, Federal Conventions cannot be overemphasised. In a country as large as Australia it is essential that Divisional Councillors have the opportunity at least once a year of meeting round a table to discuss points of common interest. True they can write to each other—true they can talk to each other on the air—but more can be accomplished by personal contact than by any other means. Misunderstandings can be cleared up and a unanimity of purpose can be established.

The 1965 Convention certainly fulfilled these needs and effectively reaffirmed the purpose of the Institute to act for and on behalf of the Australian Amateur.

It has been agreed that the 1966 Convention will be held in Brisbane and in 1967 the venue will be Hobart.

☆

8th Jamboree-on-the-Air

1000 hrs. E.A.S.T. 16th October
to
1000 hrs. E.A.S.T. 18th October, 1965

Objects:

To let Scouts and Guides talk to or listen to their brother Scouts—whether they be in the next town or in another country—and to learn about their activities, families and homes.

To introduce them to Amateur Radio and electronics.

Rules:

1. Licence regulations must be strictly observed at all times.
2. Any part of the 48 hour period may be used.
3. Any **authorised** frequency may be used. (Your Amateur Operator will be aware of these.)
4. To take part, call "CQ Jamboree" or answer another station using this call. On c.w. use the call "CQ JAM."
5. You can use c.w., a.m., s s.b. or any mode authorised officially.
6. This is **not** a contest: there are no prizes given for the most contacts made. A participation certificate is sent by your Branch Organiser to anyone sending in a report to his Branch.

Reports:

These should contain a list of stations contacted, showing call signs, locations and Scout Groups represented (and Guide Companies) as well as notes on any interesting happenings, suggestions for next year, etc. If a portable station has been set up especially for the week-end, we would like to know all about it too. Your Branch Organiser would also like a copy of any photograph which may be taken.

John Moyle Memorial National Field Day 1965 Results

AS was the case last year the number of Logs submitted were few in number. However, there was a noticeable increase in the number of Logs from stations operating in Section C, Portable, Multi Operator.

Few comments on the rules were received. The Canberra Radio Society suggested that a considerable increase in the numbers of contestants would result if the power limit were scrubbed in favour of a points handicap system. The thought behind the suggestion was that a considerable number of Amateurs with commercial s.s.b. transceivers could not enter the Contest because of the difficulty in limiting their power input to 25 watts. Comments are invited on this matter.

One operator thought that the duration of the Contest was too long and should be reduced. Another thought that the duration was ideal.

Some of the equipment used by various operators is as follows:—

VK3ZRY: 6 mx Pye Reporter running 5 watts to a 6J6 and fed into the ¼ wave whip on the car. On 2 mx he used a modified SCR522 receiver with a built-in 20 watt transmitter feeding a 5 element beam.

VK2BWI: Operated on 40, 20, 6 and 2 metres and used a selection of receivers comprising a National H.R.O., AMR300 and Geloso Receiver, plus a couple of crystal controlled converters. The equipment was powered by an a.c. generator and the station was manned by no fewer than eight operators.

VK5CL: Used a Type 3 Mark 2 on 80 metres whilst a Pye unit was used on 6 metres.

VK2ASZ: Found after setting up his station in the car on location that he had left his modulator tubes at home. This necessitated unloading all the gear from the car and making a trip home to get the missing tubes. He had to set up station again when he returned.

In conclusion we would like to congratulate the award winners and thank those who submitted logs and hope that next year's Contest sees an upsurge in field day activity.

—Federal Contest Committee, W.I.A.

AWARD WINNERS

Section A (Portable, Phone)

VK1SB—S. E. Brown	484	pts.
2ASZ—R. L. Lear	583	„
3ZRY—R. L. Harrison	280	„
4ZK—R. M. Feenaghty	925	„
5TH—T. Mitchell	186	„
6MM—M. J. McDonald	162	„
9XI—D. Reed	104	„

Section B (Portable, C.w)

VK1SB—S. E. Brown	152	pts.
2JM—J. A. Mead	130	„
5ZF—I. L. O'Donnell	318	„
9XI—D. Reed	24	„

Section C (Portable, Multi-Op.)

VK1ACA—Canberra Radio Society	901	pts.
2BWI—V.H.F. and T.V. Group of the N.S.W. Division of the W.I.A.	1176	„
3AWI—W.I.C.E.N. Station of the VK3 Division	1648	pts.
5TM—R. D. Martin	800	„
6VF—West Australian V.H.F. Group, Inc.	410	„

Section D (Fixed Stations)

VK1LF—L. B. Fisher	195	pts.
2APK—D. F. Kiesewetter	750	„
3APJ—P. J. Dettmann	575	„
4LT—A. E. Carter	685	„
5RG—R. S. Gurr	255	„
7SM—S. G. Moore	775	„

Section E (Receiving)

WIA-L2188—C. R. Christiansen	720	pts.
L3138—G. N. Earl	805	„
L4018—C. H. Thorpe	215	„
L5065—A. Raftery	165	„
L6028—B. Prosser	115	„

INDIVIDUAL SCORES

Section A (Portable, Phone)

	Pts.		Pts.
VK1SB	484	VK3AGH	32
2ASZ	583	4ZK	925
3ZRY	280	5TH	186
3AAW	275	5ZF	173
3ASW	232	6MM	162
3JO	139	9XI	124

Section B (Portable, C.w.)

	Pts.		Pts.
VK1SB	152	VK5ZF	318
2JM	130	50R	35
2YB	122	9XI	24

Section C (Portable, Multi-Op.)

	Pts.		Pts.
VK1ACA	901	VK3CB	1001
2BWI	1176	3YS	621
2ANT	835	5TM	800
2AWI	758	5VE	468
2ATZ	413	5BV	196
3AWI	1648	6VF	410
3RN	1438		

Section D (Fixed Stations)

	Pts.		Pts.
VK1LF	195	VK3ANG	305
2APK	750	3OH	135
2AHV	500	4LT	685
2APQ	215	5RG	255
3APJ	575	5CL	50
3UM	505	7SM	775
3EF	340		

Check Logs VK3ZD, VK7RY

Section E (Receiving)

WIA-L2188—C. R. Christiansen	720	pts.
VK2—F. T. Kluth	710	„
WIA-L2033—D. W. Shephard	365	„
VK2—B. R. Mitchell	315	„
WIA-L3138—G. N. Earl	805	„
L3229—R. J. Halligan	700	„
L3042—E. W. Trebilcock	630	„
L4018—C. H. Thorpe	215	„
L5065—A. Raftery	165	„
L5067—T. C. Corbin	45	„
L6028—B. Prosser	115	„

CRYSTAL PYE DIVISION

Manufacturers of Quartz Crystals for Frequency Control and Crystal Filters for highly selective circuits in the largest and most modern crystal plant in the southern hemisphere announce a new range of:—

CLOSE TOLERANCE GOLD PLATED CRYSTALS FOR AMATEUR APPLICATIONS

★ 1.8 Mc. to 15 Mc. ±0.005% in Style "D" (American HC6/U) Holders. ½" pin spacing. Amateur net **£2/16/3** incl. tax.

★ 15 Mc. to 52 Mc. ±0.005% in Style "D" (American HC6/U) Holders. ½" pin spacing. Amateur net **£3/2/0** incl. tax.

★ 100 Kc. ±0.005% in HC13/U Holders. ½" pin spacing.
1 Mc. ±0.005% in Style "D" (American HC6/U) Holders. ½" pin spacing. Specially designed for Crystal Calibrator purposes. Amateur net **£4/10/0** incl. tax.

★ 455 Kc. (nominal) Crystals for Filter applications in Style "D" or "E" (B7-G) Holders. Amateur net **£4/10/0** incl. tax.

Many other types and tolerances are available from our standard production. Please consult us on your Crystal requirements.

PYE PROPRIETARY LIMITED

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STATE OFFICES IN: ADELAIDE, BRISBANE, HOBART, PERTH AND SYDNEY

STOCKTAKING CLEARANCE SALE

BRAND NEW EQUIPMENT—Priced below landed cost

HALLICRAFTERS Receivers and Transceivers:—

S107	Amateur Band Receiver, 6, 10, 15, 20, 40, 80 metres	£70	15	0
S108	550 Kc. to 30 Mc. Bandspread on Amateur Bands	£82	15	0
SX110	As above with S meter, Xtal filter	£102	10	0
HA2	2 Metre Transverter	£187	10	0
CB8	1 watt rechargeable Transceivers (Walkie Talkie), 10 mile range .... Each	£47	11	2
SX111	Amateur Band only, S.s.b. Receiver	£168	18	6

DRAKE 2B Receiver, £198.

SWAN SW240 TCU, containing extra VFO, Xtal calibrator 100 Kc., SPK, VOX, in matching cabinet.

USED EQUIPMENT—in absolutely first-class condition

HALLICRAFTERS SX101A Amateur Receiver. One of the world's finest S.s.b. a.m. C.w. receivers, in showroom condition. Dial calibrated for 2 and 6 M. £198.

HALLICRAFTERS SX111 Selectable Sideband Receiver, as above, in A1 condition throughout, £150. Used only for demonstration.

HARVEY WELLS All band 25 watt Transmitter, small, lightweight and compact, built-in VFO, covers 2, 6, 10, 15, 20, 40, 80 metres, fully band switched plate and screen, modulated pair of 6L6G's, £30.

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LM41

SIDEBAND

By Phil Williams VK5NN.

To open this month's sideband notes I should live to voice appreciation to those who have sent me material for future notes. These will be acknowledged individually very soon, but will have to wait until urgent business at the "salt mine" has been despatched.

Our first portrait of a sidebander has been prepared, thanks to several friends who are to be nameless until after publication. This need not always be the case, however, as I have no doubt that shack photographs of active Amateurs, well known to the s.s.b. fraternity, will be forthcoming without undue pressure. I feel certain that, to have available in "A.R." a picture of the friend on the other end of a contact in his shack, operating the equipment pictured with him, will add much enjoyment to contacts. Those who have referred to the photograph taken at the Hamilton S.s.b. Convention in May, 1964, in contacts are many, and I trust the information will come forward to provide an interesting series of "Sketches of Sidebanders."

This month's technical discussion will not include particular circuits, but is an ideas column to give interested newcomers an introduction to home-construction of exciters.

The idea of getting on the air quickly and easily has frequently led embryo sidebanders to build the W2EWL "cheap and easy" sideband exciter. May I say, "please don't"! as having played with one of these I can advise against building a lot of generator, mixer, v.f.o. and amplifier circuitry all mixed up together in a Command transmitter box. The inter-action between tuning, band-changing, loading, carrier balance, and various other circuits has to be experienced to bring home the point that these little boxes are frequently real "beehives."

It is far better to start building with a simple, open layout behind a 19 inches wide x 10 inches high front panel, and what better model can be found for the home constructor than the Hallicrafters HT37 or HT32 exciters. The 37 is a phasing type exciter many thousands of which were made and are still giving good service, and the HT32 is its more sophisticated cousin which employs the crystal filter-type generator. Both generate the s.s.b. signal at 9.0 mcs., mix with crystal oscillators to intermediate frequencies about 5 mcs. from the various Amateur bands, and then subtract a 5.0 to 5.5 mc. v.f.o. signal to give the final frequency, which is then given two stages of amplification, the first a Class "A" 12BY7, and the final, two 6146's in parallel Class AB1.

In the frequency plan shown the only "nigger" is the third harmonic of 5.0 mcs. from the v.f.o., which falls at 15 mcs. when the transmitter is tuned to 14.0 mcs. This one can give a reading on the output meter if the exciter is used in the c.w. portion of the 20 metre band, but a single low-C, series-tuned, trap on the output of the second mixer, tuned to 15.3 mcs. is usually sufficient to attenuate the spurious harmonic when operating just above 14.1 mcs. There are no awkward band-pass tuned circuits required in this exciter, if plate and grid circuits of the 12BY7 driver are tuned with a 2-gang condenser—another reason why this design can be thoroughly recommended.

To get an easy and logical layout of the above design, a chassis 17 in. wide by 12 or 13 in. deep, by the usual 3 in. high, is a good starting point, and Fig. 2 shows such a design. You will see that the band switch right down the centre is the most important, with partitions below chassis, shielding inputs from outputs of the various stages. These should pass right beneath the sockets for the mixers and driver stage.

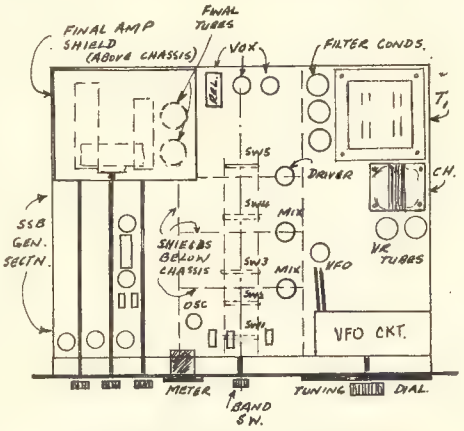

Fig. 2.—Typical layout for s.s.b. exciter.

Note how everything just falls into place! The s.s.b. generator and crystal oscillators feed mixer No. 1, the v.f.o. and mixer 1 output feeds mixer No. 2, and then the driver stage, with its output circuits below chassis, is just right for short connections to the output stage grids. The final pi-tank has 3 controls brought from the final stage shield box—all above chassis—to the front panel by long ¼ in. dia. aluminium shafts, as is the control for the driver tuning condenser.

In these modern days silicon diodes for power supply rectifiers take up no space and do not release unwanted heat, so the only components for the power supply which will take up space are the transformer and filter choke. Even the filter capacitors may be hidden away on the edge of the chassis near the diodes. If you desire, a separate power supply may save weight in the exciter.

These points have been discussed to show anybody who may be apprehensive about building his own exciter that the project may be just as easy as building a good superhet receiver. There is no high voltage or power until the anodes of the output stage are reached, and these are all boxed up in the shield, which is very useful as a safety barrier and a container for r.f., so that it won't get back to the earlier stages. From my humble experience with amplifiers, these r.f. class AB1 linear finals are very much easier to get working properly than class C plate modulated amplifiers, so I trust this discussion may leave you with the idea that perhaps an s.s.b. exciter is not beyond you after all. You can start with this open layout and get working on one or two bands first, say 80 and 20 metres for which mixer 1 and the crystal oscillator are unnecessary. Push-to-talk can be used instead of vox switching, and you have a spacious layout for wiring, but at the same time a companion unit on the table-top, alongside your receiver. There is room for experiments with new circuits such as transistor v.f.o.'s, special sideband generators — filter, phasing, third method, or what you will.

If you are interested in getting on s.s.b. for tens of pounds instead of hundreds, then you should start looking around for the parts, chassis, front panel, slow motion dial, pi-network components, transformer (about 300 volts per side at 150 to 200 mA.), a 100 mA. filter choke, a wide band r.f. choke for the final, nice knobs, flexible couplers, modulator diodes, power supply diodes, and lastly but perhaps most important, that wave-change switch. The latter will need at least four 5 x 2 pole switch wafers, and some very long shaft and spacer sections—hard to find?—yes, but not impossible to fabricate.

More details of these items which are universally applicable to sideband exciter construction, will be given in the next few months, together with their use in the particular circuits described.

Meanwhile, start a sideband circuit scrapbook, and put in it all the promising ideas, circuits, hints and kinks for alignment and adjustment, and good practices from the commercial equipment. You'll be surprised at how quickly you get a feel for sideband. 73, Phil VK5NN.

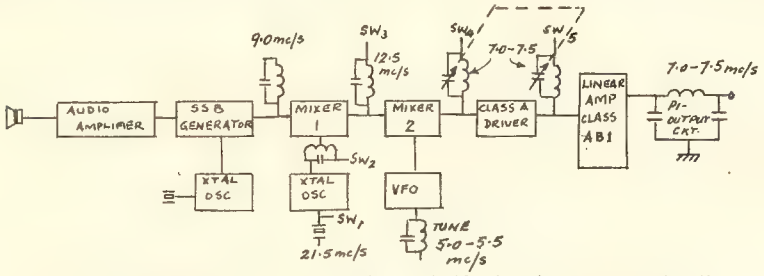

Fig. 1.—Block diagram of s.s.b. exciter suitable for Amateur construction. Frequencies shown for 40 metres. Switched circuits shown SW1-5.

So many exciters have been built using this arrangement of frequencies and similar layout that it does not need my recommendation. Figure 1 shows the block diagram of this arrangement for the 7 mc. band. You can soon work out the frequency arrangements for other bands, but, remember that for the lower frequency bands it pays to beat back from a higher frequency to the band you want, and it pays to use h.f. harmonic-type crystals to avoid the low frequency fundamental signals getting through mixers and amplifiers.

It is said that the following well-known rule for designing s.s.b. exciters was formulated by an Amateur in County Cork. Although somewhat contradictory, it contains good advice, viz.: "In an s.s.b. exciter no harmonic less than the fifth of a fundamental signal or oscillator, shall fall closer than within 20 per cent. of the final frequency." The implications are apparent if you remember that the mixers will make harmonics from anything applied to them.

☆

Publications Committee Reports That . . .

As their meeting was so close to the closing date for receipt of inwards correspondence many readers overlooked this point, hence we will acknowledge next month all correspondence received after the 9th August.

This correspondence was received from VK's: 5FO, 3ZBD, 3ZKC, 3ZRY (tech. article), and N. Lynch.

Correspondents are again reminded that all matter for "A.R." must be received at the printers by no later than the 8th of each month preceding publication and if at all possible notes should be forwarded before the 8th of the month.

The Committee discussed in detail the forthcoming edition of the "Call Book" and agreed with a suggestion from VK2 and VK3 Council that additional items should be included in the next issue, which is due late October. This delay has been caused by the current schedules not being forwarded by the P.M.G. Department. It was agreed that the "Call Book" could carry more general information, but as we are already delayed and any amendment has to be approved by the P.M.G., it was considered that at this stage we should not create further delays. Therefore, your Committee will proceed with planning an entirely new "Call Book" for 1967/68 edition.

Readers are particularly requested to advise the Publications Committee if they prefer the existing size of the "Call Book" or if they would like the new edition to be issued in the same size as "A.R." If this latter step is agreed upon, then there would be some 80 pages in the new size book and it would be possible to scan four of the existing size pages at once. The Committee were not sure if the suggested size book would suit Amateurs due to the fact that it would occupy more bench space. We will await readers' comments before deciding upon the new size of the "Call Book," but if no preference is shown then your Committee will adopt the suggested new size layout, which will enable additional general information regarding contests, frequency tables, DX prefixes, W.I.A. awards, Y.R.S., and W.I.A. broadcast times to be included. This information could be added to the existing size book, but layout would be cramped. As soon as we know readers' preferences planning will proceed.

Remember, that the new edition of the Call Book should be ready late October and will be the same size as previous editions. Your comments will determine the size of the NEXT edition.

AMATEUR FREQUENCIES:

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VHF

52 – 144 – 420 – 576 – 1296 Mc.

Sub-Editor: LEN POYNTER, VK3ZGP,
14 Esther Court, Fawkner, N.15, Victoria
ADDRESS CORRESPONDENCE FOR THIS PAGE DIRECT TO THE SUB-EDITOR

I must apologise for the non-appearance of the main notes last month. Due to a misunderstanding I failed to have the notes available in time for publication. (And you were late again this month.—Ed.)

Reports of Trans-Tasman reception of 5A and O have been received. No openings were reported on the Amateur bands.

The use of net frequencies is growing on both 6 and 2. It is a great pity that some standardisation on frequencies could not be achieved. Of course, availability of crystals and local circumstances prevent reaching agreement, but the majority of the equipment in use are fixed frequency and a common channel is as good as a beacon. Use of 53,032 in VK3 and VK4 has produced DX when the band appeared otherwise dead.

Some enterprising Amateurs have provided variable tuning of receivers to cover all eventualities, but the crystal locked variety has its advantages operating mobile and helps when travelling interstate.

So far as known the following are active frequencies: VK3: 53.032 a.m. 52.525 f.m., some 50 odd a.m. and 6-10 on f.m. VK4 Ipswich: 53,032 a.m. VK5: 52.042 a.m., 15-17 active. VK6: 52.525 f.m., no known a.m. net. VK7: believed to be 53.035 mcs. Nothing known on VK2. On 2 f.m. Channels are 145.854, 146.0 and 146.146 in VK3 as Channel A.B.C. A is the most active with around the 100 mark with overflow to B. and C. VK2, 146 is the main Channel with some active on the lower frequency. Nothing known of other States.

NEW SOUTH WALES

Activity has generally been slow during the winter months. The Ch. 0 Wagga station is being regularly copied in Nowra over a west/east path of 195 miles with signals between S3 and S9. A few 6 metre openings have occurred during the winter months judging by the reports from the 6 metre operators. Some 2 metre workings have occurred between Canberra and Sydney, and Orange and Sydney.

New interest in W.I.C.E.N. has led to the revived interest in the f.m. nets. Both old and new stations have appeared in the nets. A 50-watt base station is being installed at the Divisional Station VK2WI. It will carry the broadcast on Ch. B.

The next major Group activity will be over the New Year week-end when many field stations will be out on the State's high spots. It is possible that v.h.f. operators in other States may like to take part. The whole event could then become nation-wide. The event is still in the planning stage and details will be available in a few weeks.

The technical section of the Group are working on a project series known as the "Mobileer." The first unit is to consist of a complete 2 metre station built into a Playmaster case. The a.m. transmitter will have a QQE03/12 final, a push-pull plate modulator, a tuneable receiver and a crystal locked converter. The circuit is so arranged that it can be used as the basic unit for many things. It can be used to drive a high-powered final, supply modulation and tuneable i.f. for rigs on other bands. Anybody who is interested may like to contact David McNaughton, VK2ZVW, 2 Combe Place, West Pymble. 73. VK2ZTM.

VICTORIA

The general 2 metre activity confines itself to spasmodic bursts plus the monthly scrambles produce a dozen or so participants. These are held on the 2nd Sunday of each month at 2045 hours. The fox hunts held on the 4th Wednesday each month attract some 20-30 people in 6-8 cars. Average of 7-8 hunts each evening in the built-up areas within 5 miles or so around the city.

432 mcs. (or thereabouts): The bulk of the activity is concentrated in the period 2000-2030 hours daily. Skeds between Melbourne and 3ZDM/ZPU at Ballarat continue. 5ZDR and 3ZDM have heard each other but a two-way has yet to be made. New stations are appearing at intervals. 3ZWV using a 3/6 final has a good signal and 3ZOW is at the testing stage. 3ATN running a 6/40 modulated tripler to 65 element beam up to 100 feet is S5 in Melbourne. Active stations are 3ZDM, ZPU, ATN, ZBZ, ALZ, AEE, AUX, ZAA, ZWV, ZSJ, ZPA, ZRG, YQ (? Pirate).

The second v.h.f. Convention will be held in Melbourne during the week-end of 9th-10th October. Generally it will consist of a social day on Saturday afternoon, evening and an activity day on Sunday. All will take place within the Melbourne area. More details will be available next month and up to the minute news via VK3WI on Sunday at 1030 hrs. 73, VK3ZCK.

QUEENSLAND

VK4ZPL reports from Brisbane that VK4WI has at long last opened on 53.032 mcs. VK4IO, Ipswich and District Radio Club's station, will be operating after the news each Sunday and will take the 6 mx call back.

Congratulations to John 4PU and George 4ZLG who took the VK4 honours in the last Ross Hull Contest.

6 mx in Brisbane is still active. Each morning numbers of mobiles are heard.

Two, however, is another story. The pot is kept boiling with day and night activity. VK2 stations heard and worked recently were: 2OE, 144.71, 2AGE 144.015, 2GJ 144.000, 2ZFS 144.17, 2WQ 144.15 and 2ZCQ 144.69 or 144.15. These contacts have all been over 100 miles. Keep a look-out for the VK2's Sundays at 2000 hrs.

A new comer to the bands is ex-G3 Alan VK4AI. His interests include 144 Mc. s.s.b. 70 Cms. and a.t.v. 4ZPL.

SOUTH AUSTRALIA

Activity within VK5 is slowly gaining momentum to attain the usual Christmas activity. 6 metre enthusiasts have recently found that a b.f.o. is an essential item to demodulate an influx of s.s.b. signals that have made their presence on the bands. The signals heard to date are those of Comps 5EF, George 5GG, John 5ZJH and Bob 5ZDX. Of interest is the exciter being used by Bob in that the unit is being constructed as a project-lecture to demonstrate the simplicity of gear required for v.h.f. s.s.b.

2 metre activity has decreased during the last few weeks due mainly to the t.v.i. troubles being experienced by Jim 5ZMJ at Port Pirie. Jim has voluntarily reduced his transmissions to avoid the harassment deluged upon him by irate viewers. However, it apears that the trouble being experienced is due to incorrect application of receiving appliances. Port Pirie is geographically located 120 miles N.W. of Adelaide, and until recently required fringe area antennas, boosters and the like. Recently the area has received a local Channel 1 transmission. Understandably, perhaps, the local viewers are still using their "fringe area" equipment, unaware they are causing their "own" interference. However, publication of the relevant facts in the local newspaper has prompted an investigation by the P.M.G.'s Department.

A highlight was the South-East Radio Group Convention held at Mt. Gambier on June 12, 13 and 14. In all an attendance of 127—excluding harmonics—registered with the organisers. On the Sunday, the main competitive section of the Convention was decided. After the re-broadcast of VK3WI by Col 5CJ, a 2 metre a.m. and f.m. scramble was conducted by Colin 5ZHJ. Eighteen a.m. mobiles and 11 f.m. mobiles contested two scrambles each with Peter 3ZAV, the eventual a.m. winner, and Bill 3WK, the f.m. winner.

After the "fox" hunts had been terminated the complete contingent converged in the Glenburnie Hall for supper, prepared by the mothers, XYL's and YL's of the S.E.R.G. members, and by reports to hand it appears that their efforts were more than greatly appreciated. Entertainment was provided by a local magician, who incidentally preferred to eat razor blades for supper; and Rob 5RG delivered an illustrated travelogue on his occupational accommodation at Macquarie Island and New Guinea.

To finalise the evening's entertainment the major prizewinners for various competitions held during the convention were announced, and were as follows: Winner a.m. Scramble, Peter 3ZAV; winner f.m. Scramble, Bill 3WK; winner Hidden Tx Hunt, Peter 3ZAV; runner-up, 3ZIW; 1st Fox Hunt, 3ZJF; 2nd Fox Hunt, Darrell 3ZNC; Best Constructed Mobile, 3ZIW; Most Helpful XYL in competitions, Mrs. Sutherland, XYL 3ZAA; Person working farthest distance to convention, Ron 3ZER; Person travelling farthest distance to convention, 5ZHJ from Gawler, S.A.

It was apparent that the convention had been most successful and a credit to the persons responsible, namely VK5's CJ, MS, ZKR, ZER, ZHL, ZGR, ZTN and Trevor Hutchesson. Saturday, June 19, saw the visit of the v.h.f. group to the St. Kilda Propagation Research Centre. Approximately 40 members attended and gathered by the questions asked and information gathered more DX may be scrounged out of the "ether" by the VK5's.

WESTERN AUSTRALIA

From the VK6 v.h.f. Group News Bulletin for July, 1965, the following items have been noted. VK6ZCB has constructed a portable vidicon camera and has r.f. available on 438.75 mc. The 2 mx beacon has temporarily been discontinued following t.v.i. on neighbouring sets due to 52 plus 144 signals adding and causing t.v.i. on Channel 9.

Activity on the 52.525 f.m. net continues. VK6LR has been heard in Perth, a distance of some 50 miles.

VK6ZCF has been appointed scribe to these notes. Please pass your news items on to Barry early enough to reach VK3 by 2nd of each month.

TASMANIA

A number of new calls have boosted 2 mx activity. At least five new stations have appeared near Hobart, three near Launceston and two in the north-west within the past few months.

During June VK3 t.v. appeared strong enough to support an opening, but unfortunately no Amateur signals were heard on the North-west Coast. Leigh 7LP recently was hospitalised with a 2 mx rig at his bedside.

A number of 53.035 Mcs. mobiles are appearing around Hobart. As they become available up north they will give activity a boost.

6ZDS is expected to visit Hobart for the A.N.Z.A.A.S. Conference in August. Any other participants are requested to contact me beforehand.

Please forward your news to 7ZAO for inclusion in these notes News from all areas of VK7 should reach 7ZAO no later than the end of the month.

A.O.C.P. CLASS

Due to demand a second Theory Class has been organised and will be held on Tuesday evenings, 8 p.m. to 10 p.m., at 478 Victoria Parade, commencing Tuesday, 14th September, 1965.

Anyone wishing to enrol should do so immediately in writing, enclosing a deposit of £2.

There is also a few vacancies in the morse class which has already commenced. This class is held on Thursdays from 8 p.m. to 10 p.m.

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Sub-Editor: ALAN SHAWSMITH, VK4SS,
35 Whynot Street, West End, Brisbane, Qld.
ADDRESS CORRESPONDENCE FOR THIS PAGE DIRECT TO THE SUB-EDITOR

The low sunspot activity this past 12 months has surely jaded the most ardent DXer. There are always more enjoyable things to do than to spend fruitless hours staring hypnotically at the receiver dial with ears at the most sensitive notch. Without reward, this exercise is most wearing. If you are one of these the time might be propitious to make a comeback, because some good DX is to be worked —and more promises.

So blow the grime off the dial, dust down the key or shake up the mike and let's see what is doing.

NOTES AND NEWS

Western Carolines: KC6AA Bill, on at 1130z on 14,258. Now QRT late September.

Niger Republic: 5U7AU Smitty. Reported on 14,242. No time given but 1930 might suit.

Don Miller: W9WNV and Chuck—K7LMU will leave the States during early August for a three-month DX-pedition to the Pacific and Far East areas covering about 10 countries that are in the "rare" classification. Details concerning frequencies, dates, modes, call signs, QSL manager, etc., are not known as yet but will be given as soon as they come to hand. Trip is expected to end late November or early December. Don has promised to sent **direct** QSL's immediately after QSO to those who have contributed $25.00 or more (wow). All others will receive their cards in the usual manner after the trip is completed. The number of countries visited will depend on number of donations. Contributions may be sent now to Ack W4ECI or to the World Radio Prop. Study Association.

IFNI: T12HP and EA2CA will make a full-scale DX-pedition to this hard-to-get spot. Operation to commence 20th September, for period as yet unknown.

Christmas Island: Don—VK9DR and VK9XI still active. Try listening 14,107 kcs. around 1230z or daylight hours at the week-ends.

San Marino: KH6EDX/MI is as of now active on 14,283 around 2130z.

Sierra Leone: 9L1JR on 14,120 at 2100z. QSL to Box 907, Freetown.

Andora: At this moment PX1EQ is very active on 14,125 kcs. around 1700z. QSL to Helmut DL9JL.

St. Vincent: VP2SK and VP2SM reported on 14,120 at 2100z. QSL to Box 44, St. Vincent.

Balearic Islands: EA3OT will sign /EA6 on 20 s.s.b. early September. No fqs. or QTR available.

MP4TAO: Win is now signing VP7DL and expects to be in the Bahamas for three years. If you did not receive a QSL for this MP4 stint try a card to his VP7 call via buro—or direct.

Ethiopia: ET3USA on 14,110 is on almost daily now. No information on duration of stay. Try around 1600z if the band is open. QSL to K7UCH. His signal is a big one from a 50-ft. high beam from a 4000 feet elevation.

Marshall Islands: KX6BO on 14,228 at 1300z or late afternoons our local time.

Ascension Islands: Woody ZD8WZ is said to work 14,290 around 2000z. QSL to W4TVQ.

Tokelaus and Tonga: ZM7 and VR5 operation is rumoured to commence soon. Further information if it comes to hand. These prefixes are probably on the list of the Don Miller W9WNV DX-pedition.

MEMO TO THE DX MEN OF AUSTRALIA

October is VK / ZL / Oceania Contest month and this is **your** Contest. The phone section is on the week-end of the 2nd and 3rd; c.w. on the 9th and 10th. Full details appear in August "Amateur Radio," page 12.

Take part this year and help make the Contest a success. It cannot be if there are no VK stations on the air. Because of lack of activity in recent years, there has been a suggestion that this, Australia's own DX Contest, be discontinued. Don't let this happen—make DX contests **and submit your log.**

Gough Island: ZD9BC on 14,240 c.w./a.m. phone (yes, c.w.). Mostly at week-ends. Will be there for two years approx.

Guinea Republic: 7GIQ on 14,022 at 2030. QSL to W3ZBG.

4X0TF, Tvsi of 4X4TF, it is reported may extend his operation into September if he can. Mode s.s.b., but no other information available.

Ellice Island: Pat VR1S, 14,250, 1230z. Call on his fq.

Samoa: 5W1AD just commenced on 14.010 approx and furiously working W's. This looks like the start of the Don Miller stint mentioned above.

India, Ceylon: Near East and Iran Areas: VU2GW, VU2LE, VU2FB, 4S7DA, 4S7NE, 4S7RN and many of the more rare U prefixes such as UG, UI, UJ, UO, UL7, UM, etc., are easily workable daily around 0130z at the c.w. end of 14 mcs.

Saudi Arabia: Remember HZ1AB with the S9 sig.? The call is again being heard at various places on the 14 mc. band. Listen around 14,273, 14,232, 14,255, etc., from 1400 to 1700z hrs. Home call is K2SZS.

Yemen: 4WIC works VK's on 14,245 approx. Calls on 14,103 sometimes.

New Hebrides: YJ8BG and YJ8XX are both active. The latter is VK2AEY. Try him on 14,243 around 0330z. The former is often on 21 with a.m. mode.

Macquarie Island: Trevor VK0TO skeds W land around 0400z. Fq. 14,270.

Aden: VS9AWR Bill is working 14,260 around 1730z. QSL to Wg.-Cmdr. D. Reid, C/- Officers' Mess, Steamer Point, R.A.F., Aden. Several others are usually active from this place on other bands and modes.

QTH's

If you need a QSL from any of the following, the logs are at W2GAK: P.O. Box 7388, G.P.O., New York 10,001. Send s.a.s.e.

AC8H, AC9H, AC9H/AC3, G3AWZ, VR1N, VK9BH, F9RY/FC, F9UC/FC, VK9DR, MP4TAX, MP4MAP, MP4MAP/HZ, HZ2AMS, YV0AA/MM, YV0AA, VK9MD, VK9XI, ZD6PBD, OH2AH/0, OH2YV/0, VP8HF/VP8, VP7NY, HZ2AMS/8Z4, HZ2AMS/8Z5, YV8AJ, I1RB/ISI, ZD6I, 7QDI, 7Q7PBD, 7GIL, 6Y5LK/VP5, KG6SZ, YV9AA, K2JGG/YJ, I1RB, CR5SP.

SUMMARY

Those who follow the DX-peditioners seem assured of getting their money's worth of the rare prefixes, as more adventurous souls are planning operations from new pastures. This is good incentive for overall Ham activity—good enough to buy promotion by commercial interests. Under the influence of progressive thinking the fixed idea of classifying countries according to their boundaries, may slowly give way to a rather more pliable one, of classifying "areas"; more may be heard of this later —we surely are running out of countries, as such.

This also, is the era of Award Hunting: some being worthwhile, some not. One former is the International AH Club (Award Hunters' Club), open to all who can show proof of having obtained firstly, 25 Awards, with Stickers added for progressive attainments. Several VK's should be eligible for this Award. Good Hunting and DX. 73, Al.

W.I.A. D.X.C.C.

Listed below are the highest twelve members in each section. New members and those whose totals have been amended will also be shown.

PHONE

Call	Cer. No.	C'nt-ries	Call	Cer. No.	C'nt-ries
VK5MS	24	320	VK2JZ	61	235
VK5AB	45	312	VK2ADE	65	231
VK6RU	2	307	VK6KW	4	211
VK6MK	43	305	VK3WL	14	211
VK3AHO	51	301	VK4HR	12	208
VK4FJ	21	283	VK2AAK	58	208
Amendment:					
VK3TL	62	207			
VK2APK	64	177			

C.W.

Call	Cer. No.	C'nt-ries	Call	Cer. No.	C'nt-ries
VK3KB	10	331	VK2AGH	71	274
VK3CX	26	306	VK2EO	2	266
VK2QL	5	305	VK6RU	18	262
VK4FJ	29	300	VK3AHQ	79	260
VK2ADE	81	298	VK3ARX	66	250
VK3NC	19	286	VK3XB	75	247
Amendments:					
VK3RJ	42	230	VK3TL	78	212
VK2APK	76	230	VK3KS	74	194

OPEN

Call	Cer. No.	C'nt-ries	Call	Cer. No.	C'nt-ries
VK2ADE	28	322	VK2ACX	6	300
VK6RU	8	312	VK3NC	77	287
VK4FJ	32	308	VK3JA	43	271
VK6MK	74	307	VK4HR	7	254
VK3AHO	76	305	VK2VN	18	247
VK2AGH	83	305	VK7IZ	23	242
Amendments:					
VK3TL	85	235	VK3SX	93	123
VK2APK	82	242			
New Member:					
VK2ANO	96	101			

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YOUTH RADIO CLUBS

We have all noticed, probably, that the great majority of our clubs are in secondary schools but nobody should take this as the only possibility. A Y.R.C.. can be formed with any number of members anywhere. It is certainly easier to form one where a number of young people are grouped together as in schools, Scout groups, Y.M.C.A., Police Boys' Clubs, Church Youth organisations, etc., but it is not essential.

Successful groups have been formed in many centres by merely getting the right publicity. Any instructor offering his services will soon find a meeting place. With a little ingenuity he will find that the flow of used equipment, although irregular, can be kept going. Instructors are the vital element — you're always needed if you have a few hours to spare.

Interesting news comes from Malaysia. Mr. C. C. Hiew, former Club Leader at the Secondary English School, Pontian, Malaysia, has been sent to Teachers' College at Penang for further science training. He writes: "Acting on the suggestion of a Teachers' College Radio Club, I have the good news that it is well under way. The physics lecturer has been quite enthusiastic and a committee is being formed. The club will run as an affiliate of the Science and Maths. Society." Good luck to Mr. Hiew. Club leaders who can help in any way from advice upwards are asked to write to Mr. C. C. Hiew, 11C, Hutton Lane, Penang, Malaysia.

The new Science syllabi ('buses if you prefer it!) for 4th, 5th and 6th year students in N.S.W. High Schools pay a great deal more attention to Radio and Electronics than ever before—so much so, that many academically qualified teachers will need a new emphasis in part of their training and also immediate help in the schools that can ideally be given by those with practical qualifications in the electronics industry—and that includes Radio Amateurs. In N.S.W. the 4th year Syllabus is in action this year and the new 5th and 6th year Syllabus goes into use in 1966. I don't know the situation in other States but it should be worth while for the Divisions to investigate.

Safety precautions are important in any Y.R.C. Nobody at the elementary or junior level should be allowed to handle anything more lethal than a 9-volt battery. Intermediate Certificate candidates should only be trained in the use of a.c. mains if their parents request it and guarantee to supervise. All high voltage and a.c. points in club equipment must be protected from accidental contact. The Electricity Authority of N.S.W. issues a pamphlet, "Use Electricity Safely," and Club Leaders should consider getting one of these for each member. Boys are apt to become over-confident and not only their welfare but also that of the Y.R.S. must be considered. The proper treatment for electric shock should be taught and posted as a notice in the clubroom.

Congratulaions to John 5UL and Bruce 5OR, public-spirited types who will lead a committee to handle VK5 Y.R.S. activities while Bob 5OD is overseas. The word is that they will expand Y.R.S. activities. I.C.S. have donated a course in basic electronics for a club member. If I am not already excommunicated in VK5, fellows, let me have a little news later. All our officials are unpaid, so I realise it takes a good type to volunteer some spare time to organise at Division level or become a Club Instructor.

What a lot of interesting careers are waiting for all your Y.R.S. types! The Australian Broadcasting Commission is looking (in September) for Technicians-in-Training between 15 and 18, with Y.R.S. work a definite advantage. The Overseas Telecommunications Commission will be calling for trainees, in October, or November, for a three years' course of great opportunity.

Automation will never put you out of a job if you do courses like these.

The American system of Novice Licences (current for one year only) has a great deal to recommend it for this country. India and Israel have got it. The Russian training in radio for young people is highly organised for the obvious benefits to the country and offers privileges like those in America. In China, primary school children learnt the elements of electronics by building simple radio sets. Can we afford to be left far behind? The Federal Government's interest in Science Education could lead to an enlightened attitude to Novice Licences, which, as an incentive towards higher qualifications, could do a great deal of good at practically no cost. Many of us in Y.R.S. work feel that the full possibilities of Y.R.S. cannot be realised without the incentive of a temporary Novice Licence for young people and special concessions to enable busy Science Teachers to have a School Transmitting Station in action without a full A.O.C.P. (proper control and certain restrictions would still be necessary, of course) . Would Club Leaders and others please support this through your Division and also by telling Rex 2YA what you think?

Which one of my four readers will send some news this month? Ken 1KM.

☆

NEW CALL SIGNS

MAY, 1965

VK1AQ—N. McLeod, 33 Canberra Avenue, Forrest, A.C.T.
VK1ZCC—L. G. Carpenter, 92 Phillip Avenue, Downer, A.C.T.
VK1ZMR—D. R. Miles, 7 Stow Place, Watson, A.C.T.
VK2ML—G. B. Hart, 213 Kingsway, Cronulla.
VK2ZDQ—H. K. Bavister, 488 Blaxland Road, Eastwood.
VK2ZFF—P. C. Goldstone, 134 Byangam Road, Murwillumbah.
VK2ZFM—R. J. Shapcott, 33 Clark Road, Hornsby.
VK2ZGM—G. T. Morrison, 20 Farm Street, Boorowa.
VG2ZHP—H. J. Pemble, "Breena," 89 Raunders Bay Road, Caringbah.
VK2ZIN—D. W. Bursill, 47 Drumalbyn Road, Bellevue Hill.
VK2ZKN—C. A. A. Nieuwendyk, 228 Margaret Street, Orange.
VK2ZLN—J. T. Hart, Flat 6, 69 Addison Road, Manly.
VK2ZOZ—R. M. Smith, 6 Central Avenue, Eastwood.
VK2ZPV—V. G. Punch, jun.—C/- Four Square Store, Budgwoi.
VK2ZRX—R. Soulie, 17 Jane Street, Randwick.
VK3AAR—J. Wall, 33 Calvert Street, North Geelong.
VK3AFB—F. Blode, 53 Clay Street, Moorabbin.
VK3ANF—K. Tsiaprakas, 113 Walpole Street, Kew.
VK3ZGY—J. Monro, 75 Devonshire Road, Watsonia.
VK3ZHU—R. B. Knaggs, Wangaratta South.
VK3ZJE—K. G. Moncur, 235 Union Road, Ascot Vale.
VK3ZNK—F. J. Heine, 73 Duff Parade, Lower Plenty.
VK3ZPI—P. R. Hammer, 285 Bay Road, Cheltenham.
VK3ZPS—Dr. D. R. Blackman, 23 Mary Street, St. Kilda.
VK3ZQE—J. A. Evans, 9 Bon Vue Road, North Balwyn.
VK3ZRN—A. L. Harvey, 6 Orrong Road, Elsternwick.
VK3ZSA—A. J. Skewes, 56 Sisely Avenue, Wangaratta.
VK3ZTG—R. J. Seal, 3 Carlisle Crescent, Oakleigh.
VK3ZUL—G. W. Jones, 12 Mendip Road, Reservoir.
VK3ZGV—B. D. Judd, 23 Ralton Avenue, Glen Waverley.
VK4JX—K. J. Drummond, 17 Coronation Street, Bardon, Brisbane.
VK4OX—R. C. Marschke, 50 Leeds Street, Gulliver, Townsville.
VK4ZGR—G. Rees, 92 Fuller Street, Windsor, Brisbane.
VK4ZJG—J. G. H. Rowell, 267 Ellison Road, Geebung, Brisbane.
VK5RY—R. F. W. Collins, 5 Dean Court, Clovercrest, Modbury.
VK5VS—A. V. Sneidze, 78 Reid Avenue, Hectorville.
VK5ZAL—A. L. Purnell, 18-A Arnold Street, Underdale.
VK5ZKX—J. M. Ramsey, 34 Dunrobin Road, Hove.
VK5ZLO—D. L. Price, 53 Robert Court, Para Hills.
VK6IC—G. Cole, Postal Address: P.O. Box 310, Kalgoorlie. Station Address: Trafalgar, W.A.
VK6ZBV—B. E. C. Varley, 79 Stubbs Terrace, Daglish.
VK6ZCP—B. T. Pagoda, 17 Sydenham Street, Rivervale.
VK6ZCU/T—A. A. J. Cook, Postal Address: Box 84, P.O., Kellerberrin. Station Address: Great Eastern Highway, Kellerberrin.
VK6ZFG—I. G. Iskra, 26 Boundary Road, St. James.
VK6ZFH—G. C. F. Hufner, 234 Ninth Avenue, Inglewood.
VK6ZFP—R. V. Parkes, 21 Angelo Street, South Perth.
VK8AM—A. M. Dunn, 752 Dempsey Place, Rapid Creek, Darwin.
VK9ZBB—B. D. Bannister, C/- A.W.A., Lae, T.P.N.G.

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S W L

Sub-Editor: Don Grantley, WIA-L2022.

[Your new scribe needs no introduction, only possibly to the new members of the S.W.L. movement, and for their information, he has been an outstanding S.W.L. for some considerable time, so with the valuable experience gained during that time, will be a very competent person to compile our page each month. I would like to take this opportunity to thank all those who assisted me during my term and trust that they will continue to give the same co-operation to this able member.—Chas. L2211.]

Eight years ago I sat in the shack at Holbrook taking part in the R.D. Contest. The equipment which I used was a battered old R1082, the antenna was a long wire. I did not exactly set the world on fire with this effort, but it was a comeback to Amateur Radio after a period of six years' absence. Since that time I have met many S.W.L.'s and Amateurs, cultivating many friends from their ranks. Any success I have had is due to the help and encouragement I received from such stalwarts as Eric Trebilcock, Frank Hine, Dave Duff and many others in the early part of my listening career. To all these chaps I take this opportunity to encouarge others to this wonderful hobby.

For some time my good friend Chas. Aberneathy has been writing this page with your help and doing a mighty fine job of it, now he feels that he would like a spell, and I have taken over this task which cannot be done properly without the help of all who are in any way connected with swl'ing as a hobby. So chaps, I will be pleased to hear from old friends and new at my new address in the Blue Mountains before the end of each month. N.S.W. listeners, however, would you please send all bulletin notes to Chas. as before. Format of this column will differ slightly this month, but will return to normal next issue.

It is interesting to note in Monitor, official magazine of the I.S.W.L., that S.W.L.'s are held in high esteem by K8UNI and members of the Michigan South-eastern Radio Club, who have had valuable reports from G listeners on 160 metres. Not that it concerns us here I guess, but stations in the Detroit area are heard on 1806 or 1820 mcs.

OVERSEAS NEWS EXTRACTS

G3UDN is the station of the Mid-Warwickshire A.R.S. at Leamington Spa. Station is active on all bands and they want reports—good, accurate reports that is, from any overseas stations. Congratulations to Eskil Eriksson from the VK S.W.L.'s, during April he received two confirmations to take him to 301 confirmed, making him we believe the first S.W.L. to reach the 300 peg, and thus the top S.W.L. in the world. Having trouble getting QSL's from UB5, then I.R.C. to Joe Kleinmann, P.O. 97, Mukatchevo, Ukraine, U.S.S.R., could help with UT5DK, DL, DM, DU, UB5AOQ, DNB, DMM or VH.

News from SV1 to the effect that there is much pirate activity in that country, and the only licensed Hams are in the SV1AA to SV1BD group. Don't waste a report on any others, as they are not licensed and will be returned to you. On the DX front overseas it is to be noted that 10 metres is on the improve, and openings to many African and Asian countries are reported. 15 metre reports show, too, that this band is a source of good DX to the European S.W.L. That should put Peter Drew and the VK6 boys in the firing line for some more countries. Thanks to "Monitor" for the foregoing notes.

AUSTRALIAN NOTES

Most of this information has been passed on to me by Chas., and has been answered by him. For this month only, I am giving you this section of news just as it comes to hand without breaking it up into States, however, as stated previously, we will return to normal next issue.

First letter is from Noel Harrison, L3101, of Sunshine. Cold wx has hindered his listening but reception of a W7 has added to his States' tally. Over to Allan L6029, who mentions that his latest confirmation TF2WJF has never contacted a VK. He is heard on 20 metres daily 14,230 to 14,280 Kcs. at 0700z to 0745z. Alan gives an excellent list of countries heard. And Geoff L6030 tells us he has the 50-foot wind-up tower erected with nothing on top. See if you can confiscate a copy of the CQ Antenna issue of 1958 also 1959, you may find a small beam in one of them. And whilst on the VK6 group, we have Bryan L6023 with some good listings CT1, YO, LU on 20 to name a few.

Back to VK5 for a letter from Alan L5065 who found the bands quiet with DX to North America each week-end and odd openings to South America and South Africa. Alan tells of his QSL's received, including PJ, YS, OA, TI, to name a few. A long and interesting letter from Greg of Newtown, Tas., one of the most interesting letters I have ever handled in Amateur Radio. I, too, will answer you in person.

From Ray L2287 comes his additions to the ladder, and reports of a very fine batch of QSL's. 3W8, FZ, HA, CR6. Colin 2188, of Booragul, has a 20 metre dipole in operation, and is very pleased with the results. From Warwick L3211 word comes of new QSL's to hand from 9M8, ZL3VB and OD5BZ, another five confirmed will take him into the 100 group.

And whilst on the subject of VK3, Chas. has passed me a screed from Eric L3042. One day I will pick up one of Eric's letters and read that Footscray beat the Magpies . . . it can happen, Eric, I've seen it. To briefly summarise Eric's notes, he has 37 QSL's to hand from VK2, 3, 5 and ZL on 1.8 mc., which is a f.b. effort and one which not many of us can get near. How about it chaps? Inwards QSL's: DU9FB, FB8WW, JA1DMX on 3.5, OA4AO, OA4CG, PJ2MI, VU2NRA, YI2WS, K7LMU/3W8 plus 2 MM's . . . a few more confirmations from /MM stations will give Eric his 200th QSL, from this type of station, this is probably another first. It is evident from Eric's list of stations heard on 40 metres that this band is doing the job, last night I heard quite a large number of countries in the c.w. segment of the band but nothing to compare with XE, KR6, UF6, UR2, 9M2, 9M4, UP2, UD6 and VR4, which Eric reports hearing on this battered old band.

Whilst in Melbourne we have a long letter from Harry Major who over the years has done such a fine job with the young chaps. Thanks ever so much for your interest OM, keep up the good work . . . From Greg Earl comes word that he has received QSL's from UB5, ZP5, HM1, K5, KR8, 9M8, HB9 and VU2. Good work Greg, your ladder additions noted. No word this month from VK4. Where are you Afton? My good friend Mac Hilliard, now resident here in Sydney, is going along steadily but like us P.M.G. types is not overburdened with spare time.

Finally, from Ian Woodman L3006 comes a report that 40 members took part in a tour of the Herald-Sun newspaper building and were shown just what it takes to produce a daily paper. The lecturer for the July general meeting was from the fire brigade and spoke of communications in relation to fire fighting. The amount of gear brought along to the July radio construction night was down on previous nights. Ian requests from chaps who want gear adjusted at these nights that they contact the instructor beforehand so that the correct type of test gear is available to do their job. Maurie Cox, where are you, what are you doing?

From the SWL's who are active but do not send in a report we need your support at this vital stage in the life of our hobby. All letters will be answered and the more interesting information I can collect from our own chaps the less I have to import from overseas sources.

Now for a final on the personal side, I have renewed my acquaintance with many of my radio friends over the past few months, some by letter, some by telephone and others in person. Let me, however, place on record my personal sadness at the loss of my old pal Barney Smythe. Over the years he and I worked together behind the scenes on many an occasion, and it was only a few weeks ago I learned of his passing. Thanks for your friendship and help, Barney, you will be ever remembered at L2022.

L2022 came back on the air after a break of six months during July, still using the AR7, and an antenna which was only 4 feet from the ground and tied to a tree. The DX was staggering, although no actual logging was done, it was evident that the new QTH at Hazelbrook when coupled with the old V beams will put 2022 back in business once again.

CARD SWAPPERS

I have a list of SWL's anxious to swap cards, and whilst we all have our own opinions on this subject, I pass them on to any who may be interested. KBD3846 Daisy May Racine, 82 Furnace St., Danielson, Conn. KKB0962 Roy Morrison, Box 163, Brooklyn, Conn., WB2DTW Rick Shaper, 85 Elm Drive, Roslyn, New York and WA8AWH Mick Wislocki, jun., 6809 Chambers Ave., Cleveland, Ohio, 44105 Cuyahoga County, U.S.A. Reminds me that Ron Hughes, 214 Bishopsgate, Bank Chambers, London, E.C.2, is compiling a list of members wanting to swap cards. I know nothing more other than this note which appears in the current "Monitor."

COMMERCIAL DX

Whilst these interests are the sworn enemy of Amateur Radio, there are some which warrant a mention, one of these is the giant hydro-electric powered station at Quito Ecuador, South America. HCJB operates in all bands and for anybody who needs an HC QSL they will confirm all reports 100% via Box 691, Quito.

OVERSEAS LADDER

As mentioned earlier Eskil Eriksson, of Sweden, heads the lists, and our Eric Trebilcock runs second. Countries are running out for these chaps, and with the world situation as it is, we wonder if our boys will ever breach the gap. It is one thing to hear the DX, another to get the report.

S.W.L. COMMENT

Much has been said and written in the past re the low percentage of returns S.W.L's are receiving in return for their cards. There is no doubt that many of the non-returns are due to the attitude of the Amateur receiving them, however, there are many other reasons to be taken into consideration and a major one is the fact that many of us just don't think hard enough when we prepare a card. I have in the past been one of the worst offenders in this category, and no doubt some of you, too, have been guilty of sending out reports that represent no value whatsoever to the chap who is on the receiving end, and believe me most of the chaps want a report that is of some use to them. The Russian Amateur, however, seems to QSL to anything and everything, in fact, I have a 95% return from stations with any of the U prefixes, all of which I send direct to Box 88, Moscow. In passing I note the card of UQ2AB which reads . . . this card is confirming that S.W.L. . . . heard my etc.

So chaps that winds it up for this month, remember that we would like to hear of your doings in order that this page may remain truly representative of the Australian Listeners. To those chaps who have been disheartened by the attitude of others to our section of the hobby, remember that it is up to us to make our s.w.l groups what we want them to be. We are financial members of the W.I.A., and as such are entitled to a voice in any affairs which may arise concerning us . . . but it is most important that we discuss any difficulties which we may have with our Federal Councillor in order that he may assist us, after all that is the reason why he is in office. Best of luck and good DX. 73, L2022 Don.

S.W.L. DX LADDER

	Countries Conf.	Countries Hrd.	Zones Conf.	W States
E. Trebilcock	286	292	40	50
P. Drew	169	259	37	39
D. Grantley	127	285	39	35
A. Westcott	102	159	34	11
L. James	95	191	33	15
R. Kearney	94	149	32	8
W. Smith	95	188	30	7
M. Hilliard	92	241	33	14
G. Earl	89	165	33	15
N. Harrison	63	183	32	38
A. Rafferty	41	161	24	9
B. Macintosh	20	63	17	4
B. Prosser	34	164	12	5
T. Corbin	13	34	9	—

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FEDERAL AND DIVISIONAL MONTHLY NEWS REPORTS

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FEDERAL

FEDERAL EXECUTIVE MEETING, 16th JUNE, 1965

Arising from the previous meeting, advice had been received from the Customs Department that duty free admission of a narrow band filter had been agreed. Reference Y.R.S. matters, it was agreed that all out-of-pocket expenses would be reimbursed to the Federal Co-ordinator, Rex Black, and the Activities Manager was to inform him to this effect, also conveying to him the need to take on less of the detailed organising work in N.S.W. and more of the overall co-ordination. Certificates would now be standard throughout the Commonwealth, and the Co-ordinator was at the same time granted an imprest of £10. The Business Manager reported that the "QST" subscription fund was now self-supporting and new subscriptions were continuing. The Communications Manager reported that he and Activities Manager had reviewed the R.D. rules and minor changes made. He had also prepared an article for publication in "A.R." suggesting major changes which would be shortly sent for publication. Mr. Ken Pincott was present from the VK3 Division to inform members of proposed changes to "A.R" and to discuss housing of F.E. equipment. The major point of the meeting was spent in discussing proposed changes to the Handbook and the detailed technical aspects of s.s.b. power measurement.

FEDERAL EXECUTIVE MEETING, 7th JULY, 1965

Correspondence was received after confirmation of the minutes of previous meeting. The major items were letters confirming that reciprocal licensing arrangements had been concluded with the U.S.A. on June 25, the P.M.G. notification of use of frequencies on 420-450 mcs., the information that Maj.-Gen Dougherty would open the 1965 R.D. Contest, information on the requirement for high power permits for special moonbounce experiments, and letters of appreciation from several Divisions for early receipt of Convention Minutes.

The Secretary reported of further discussions with the P.M.G. re s.s.b. power measurement and several other points which required clarification. The Activities Manager explained of some difficulties in obtaining N.F.D. Contest results and the action he proposed taking to rectify. A lengthy discussion took place on the proposals re the Handbook to be submitted to the P.M.G., for which purpose, Mr. Owen (the VK3 Councillor) had been asked to attend and assist. Further details were to be requested from VK2 re their proposal for a free A.O.C.P. course for the School of Pacific Administration before any action taken. Some discussion also took place on the question of future I.T.U. representation and documents dealing with this matter were to be requested from the present representative. Until a full statement of expenses had been received from the Y.R.S. Co-ordinator it was resolved to forward him an advance payment of £25.

I.A.R.U. CALENDAR, JUNE, 1965

It was reported that the I.A.R.U. came into existence just 40 years ago, on April 17, 1925, when 23 nations, including Australia, formed the Union.

As most philatelically-minded Amateurs will know, the I.T.U. this year in May celebrated its 100th Anniversary and will top off celebrations with a Plenipotentiary meeting in September. This meeting will only deal with administrative details of the Union with several variations to its structure, but as it is not intended to deal with regulatory matters pertinent to Amateur Radio, official observers will not be invited to attend. It may be decided at this meeting when the next frequency allocations convention will be held. The I.A.R.C., whose active members are mainly I.T.U. employees, will hold its third Amateur Radio Convention between September 17 and 20, and it is hoped this Club will be able to carry on its good public relations work relating to Amateur Radio with national delegates who attend the I.T.U. conference.

From the 4th-6th March this year, the Region II section of the I.A.R.U. met in Lima, Peru, to discuss Amateur matters. One major item was whether the old Amateur Society, R.C.C. (Cuba), was still in existence as an application had been received at h.q. for the A.N.R.A.C. (Asocciacion Nacional de Radioaficionados de Cuba) to represent Cuba in future. This will be further looked at by the I.A.R.U. and a vote if necessary will be taken of member societies. The Region I Executive of the I.A.R.U. held a meeting in Yugoslavia on July 10-11, with a view to a Region I conference in May, 1966, when European matters of concern to Amateurs will be discussed.

It was announced that the following countries had now reciprocal licensing arrangements with the U.S.A.: Australia, Belgium, Bolivia, Canada (under an earlier agreement), Costa Rica, Dominican Republic, Ecuador and Portugal. The first operating permit granted under the new agreement went to Mrs. Grace Glorioso TI2MAG, who is living in Louisiana.

It is pleasing to report that on the 12th February, 1965, through the stalwart work of the A.R.A.L., Lebanon restored operating privileges to its Amateurs.

Newest call sign change goes to the Cayman Islands where former VP5 licensees now sign ZF1 calls.

Due to previous voting proposals, two new societies have been admitted to membership. These are Radio Society of Zambia (R.S.Z.) and Bahamas Amateur Radio Society (B.A.R.S.). The W.I.A. joins with the I.A.R.U. in wishing them every success in the future.

As is becoming all too usual these days, this Calendar contains a list of stations monitored by the I.F.R.B. in Amateur bands from October, 1964, to March, 1965. Stations that may possibly be heard in Australia are shown below:—

Peking, broadcasting	3500, 3659, 3669
Pyongyang ,, ...	3560
URS, fixed, A1	7006, 7019, 7024
Karachi, broadcasting	7009
Pakistan ,, ...	7020
Peking ,, ...	7034, 7060, 7080
KUI 20, fixed A1	7040
Cairo, broadcasting	7050, 7073
RVZ 73, fixed A1	7074
Indonesia, broadcasting	7089
Moscow ,, ...	7090, 14,320
Teheran ,, ...	7093
Vatican ,, ...	14,209
Cambodia ,, ...	14,308
BXR, fixed, A1	14,336

Any VK Amateurs hearing these stations or others not listed should obtain a report sheet from their Divisional Secretary, who should forward these to Federal Executive for action. Full details, as contained on the sheet, should be obtained.

The admission of a proposed new member to the I.A.R.U. was voted on by the Executive, and in view of the information supplied by h.q., it was resolved to vote for the admission of the Nigerian Amateur Radio Society (N.A.R.S.). A completed vote sheet has been forwarded to the I.A.R.U. on behalf of the W.I.A.

FEDERAL CONSTITUTION ALTERATION

Federal Executive, on behalf of the Federal Council of the Wireless Institute of Australia, hereby gives notice that it is intended to alter the **Federal Constitution of the Wireless Institute of Australia 1947** as follows:

(a) by adding the following words at the end of Clause 3 thereof: "and to form a Company to take over the real and personal property belonging to and to give an indemnity against all or any of the liabilities of the Institute and to pay the costs charges and expenses of such formation and to transfer all the assets of the Institute to such Company."

(b) by adding a new Clause 67a after Clause 67 thereof as follows: "67 (a). Upon the incorporation of the Company referred to in Clause 3 of this Constitution, the Institute shall be dissolved and the assets of the Institute shall be paid and transferred to the said Company in consideration of the said Company indemnifying the Institute, the Council, the Executive and members against all costs, expenses and liabilities."

Any member of the Institute not in agreement with the proposed alterations should notify his disapproval with the reasons to the Federal Secretary within 14 days of the publication of this proposal.

I.T.U. FUND

As at the 8th August, contributions to the fund, as a percentage of the target set at the Sydney Convention are as follows:—

VK2	22%	VK5	54%
VK3	50%	VK6	103%
VK4	50%	VK7	100%

These figures do not necessarily represent all monies collected in Divisions but only those received by the Federal Treasurer. Please keep those contributions flowing to your Division to assist in protecting your privileges.

—Bill Mitchell, VK3UM,
Federal Commns. Manager.

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FEDERAL QSL BUREAU

Watch out for Lew W6EYB who is going on a DX-pedition to British Honduras and will be located at Belize. Call sign to be used and date of operation not yet known. Lew will use 14 mc. mainly and will set aside one night exclusively for VK/ZL contacts.

Mention was made in this column over 12 months ago of an impending stay in VK by Rex Glem ZL2ASM. Unforseen circumstances have delayed his arrival, but he will definitely arrive in Melbourne on 28th September. He will remain here for three years and hopes to be located in Brighton area. He will take out a VK call sign.

Jack W6BPO is also due to arrive in Sydney on a vacation tour with his XYL on October 7. Jack spent some time out here during the war period and married a VK4 girl. He plans to visit VK4, 5 and 6 during his stay. He is connected with Panam and further details of his movements may be had from VK2PU.

Details and specimen copy of the Vienna Award have been received from OE1IU, P.O. Box 24, Vienna, 16/107, Austria. Further information can be had from OE1IU or from this Bureau.

The Hon. Sec. of the Amateur Radio Mobile Society (G3FPK) forwards information of a Mobile DX Activity Sunday on 5th September from 0800 to 2000 G.M.T. Details of suggested frequencies, awards, etc., may be had from this Bureau.

—Ray Jones, VK3RJ, Manager.

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NEW SOUTH WALES

It has been a generally quiet time in the VK2 Division during July. The first real taste of winter saw to that. John VK2IQ has been collecting names of Amateurs who are interested in "Call Letter Licence Plates." So far he has had 100 positive replies, but the more the better for the cause. If you are interested would you contact John VK2IQ, C/- Wireless Institute Centre, Crows Nest.

The addition of a 50 watt 146 f.m. unit at the Divisional station VK2WI will be a second 2 metre channel for use on the broadcasts. At present there is an a.m. signal on 145.13 mcs. Some problem is being experienced in the h.f. coverage as long skip is often on the 40 metre channel. For those who miss the 11 a.m. broadcast on Sunday may hear a repeat on Monday night at 0900 G.M.T. from the Hunter Branch station VK2AWX on 160, 80, 40 and 2 metres.

On Friday, 24th September, Ted Whiting, VK2ACD, wil be lecturing to the General Meeting of the Wireless Institute Centre. His subject will be "Radio Links" and the part they play in point-to-point circuits. Interstate and overseas visitors are always welcomed.

On the Educational side of Divisional activities, Ces VK2IR, who is handling the instruction with the classes at W.I.C., reports that there are some vacancies in the class and if there are people who would like to improve their theory in order to re-sit for an exam., then they should contact him, at the class on Mondays and Wednesdays. Some new tapes have been added to the Taped Lecture Library. Included are No. 31, Communication Receiver Design, 60 minutes and 21 slides by Keith Woodward, VK2AU; No. 32, As it was in the Beginning, 90 minutes, 26 slides, by Joe Reed, VK2JR; No. 33, Prince Philip's Dunrossil Lecture, 60 minutes. These, and other

tapes in the library, may be borrowed by writing to the Education Officer, W.I.C., Crows Nest.

Next month will be the start of the Field Day and Convention season. During the Six Hour Week-end there will be Conventions at both the Hunter Branch (Newcastle) and the South-West Zone (Tumbarumba). These will be followed by the Blue Mountains Section and about a month later by the Illawarra Section of the W.I.A. at Wollongong, with one-day events.

Did you remember to send your R.D. log in?—2ZTM.

SOUTH-WEST ZONE CONVENTION

This year the South-West Zone of the VK2 Division will hold the Annual Zone Convention at Tumbarumba. Within easy driving distance of southern N.S.W. and Victoria, a good roll-up is expected. The three-day programme will cater for all interests. From Saturday, 2nd October, to Monday, the 4th, the Tumbarumba and District Radio Club will be host to their visitors.

On Saturday the focal point will be the Soldiers' Memorial Hall. The morning will be registrations, etc. After lunch, there will be a visit to Pady's River Falls. Then afternoon tea followed by either a visit to the Trade Fair or a look round town. The Dinner and Official Opening will include a hook-up with the Hunter Branch Dinner. This will be followed by a social evening.

The field events will be held on Sunday at the show ground and includes all the popular Convention activities. An all-band scramble, 2 metre fox hunt, 2 metre hidden tx hunt, h.f. hidden tx hunt, and the popular new field day event, the 2 metre pedestrian tx hunt. There will be a disposals and other novelty events. The evening will be devoted to social activities.

To finish the week-end, Monday will be spent in a tour of the Western side of the Snowy Mountains Scheme. It will visit Khancoban, Murray 1, Tooma Dam, Tumut Pond and Cabramurra. From here Sydney visitors can return either by Cooma or Tumut. Visitors from Wagga and west will return via Tumbarumba.

Bookings for the week-end may be made with the Club Secretary, Trevor Hoodless, "Blue Hills," Tumbarumba. Motel accommodation, single 42/-, double 37/6 per person, B. and B. Hotel, 30/6 per person, B. and B. Camping ground and Caravan Park at showground with electricity and H. and C. showers, etc. Dinner 15/-, Registration 15/- per person. Deposit on accommodation £1, please state which nights accommodation required.

Once again the South-West Zone Convention will be an ideal chance for Amateurs from near and far to get together and the Tumbarumba and District Radio Club members will be pleased to see you.

John Clode VK2EZ (pres.), Trevor Hoodless VK2ACZ (sec.).

CENTRAL COAST AMATEUR RADIO CLUB

The regular monthly meeting of the Central Coast Amateur Radio Club was held on Friday, July 16, at the School of Arts, Gosford, with an attendance of 20, including Allen Cundy—a budding Ham—as a visitor. After the general business, which unfortunately was rather lengthy, Lindsay VK2ON gave a short but interesting talk on a transistor tester which he had constructed. He had a lot of attentive ears as transistors are still rather unfamiliar ground for a lot of people. It gave us information on how to judge the amplification quality of a transistor.

A number of surplus f.m. sets were received for disposal, some of which were in good working order. After pulling names out of a hat, five lucky members went home with "possibilities" in the boot.

A good hot cup of tea and delicious supper were enjoyed at the end of the evening. Our president, VK2EH, designed and made a receptacle for holding all our supper gear so that now there is a place for everything and everything in its place, so to speak. Ernie was formerly a manual arts teacher but since his retirement obviously has not lost his touch for excellence.

Geoff Gill, VK2AII, is a very keen flyer and is working hard to join the exclusive fraternity of flyer-hams. He expects to have his pilot's licence in approximately six months, all being well, and he certainly deserves it for he has put a lot of hard work and time into it. Geoff is a man of many interests and is well known in the district as an actor.

Quite a bit of interest is being generated in 432 mcs. Alec VK2AAK was the first from this district to get on 432 working with Eddie VK1VP. He is having his trials and tribulations with an amplifier, but this seems to be a general condition for 432 amplifiers at the moment. The difficulties add to the challenge. There has been a 432 g.d.o. going the rounds—Phil VK2TX constructed it, Eddie VK1VP calibrated it, and Lindsay touched it with magic and now it is giving yeoman service. Geoff VK2XA and John VK2RF are seriously considering taking the plunge to 432.

Our meetings are held regularly on the third Friday of each month at the School of Arts, Gosford, 7.30 p.m. Anyone able to attend as a visitor will be very welcome. That's all the news for this month, 73, Mona VK2AXS.

SYDNEY YL's

The Sydney YL's had their regular quarterly meeting on July 12 and celebrated their first anniversary. They met at Hebe's QTH (VK2AOK) for lunch and a yak session which was thoroughly enjoyed by everyone as it seems this is their only opportunity to catch up on news.

Muriel VK2AIA has received the Calgary Stampede Award for having contacted 10 stations in Calgary at the time of the Stampede. This is the biggest rodeo in the world and is a very colourful affair with parades, attractive western-style clothes, and Canadian Indians in their native costumes adding to the general "wild west" atmosphere with displays of war dances, etc. Muriel also has three new Gold seals for her YL International Certificate.

Verle VK2MR was enjoying a spell from work with three weeks' holidays. She and OM, Marc VK2CM, are searching for a suitable new QTH with a friendly landlord with regard to aerials but to date have not had any luck.

Hebe VK2AOK has had a trip to Perth and whilst there met VK6YL and OM VK6RX again, also met VK6CF and VK6KX; and VK5CX Gilbert on a short stop-over in Adelaide. Hebe and Mavis VK3KS got together for a few hours in Melbourne between trains and I understand had a most enjoyable visit.

Mona VK2AXS is the country member of the Sydney YL's and at the moment is concentrating on picking lemons and oranges.

Hebe recently had a visit from Poley Clark VK7CK and XYL, who were on their way to Queensland for a trip. Muriel and Verle were also able to meet them at the same time and I understand there was a lot of interest in reports of the Clark's recent overseas trip.

Raj K7NZO and Hebe try to maintain a sked each Wednesday on 14.230 mcs. at 0600 G.M.T. and YL's are invited to join in. Raj is very active in the International Sidebanders. 73, Mona VK2AXS.

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VICTORIA

Divisional Council met during July, only one member not in attendance. Matters considered included the proposed W.I.C.E.N. exercise in September, possible repairs to the building, inclusion of Y.R.S. notes in Divisional broadcasts, the next issue of the Call Book and the Federal Councillor's report, plus the usual routine matters.

The overall planning of the exercise is complete and it is now up to the individual groups to complete such plans as they deem necessary for the success of their part of the operation. We are now awaiting a report from the builder on the need or otherwise for repairs to the building. Y.R.S. notes will be supplied by Dave Buck for broadcasting on alternate Sundays. The President reported on his recent discussion with VK2 Federal Councillor, and subsequent correspondence on the subject of the Call Book and the Publication Committee's views on what could be deleted to save increasing the price of the book. VK3 Council feels the same way as our friends in VK2, and therefore publication committee will be advised that it is considered advisable to include everything from the last issue, plus replacement of material deleted from recent issues even if it means some increase in price.

Considerable time was spent on Federal Councillor's report, especially the submission made to the P.M.G.'s Department by F.E.

The Annual Dinner will be held at Menzies' Hotel on 5th November. We have been assured that parking is no problem of a Friday night and it is hoped that this year more members from north and west of the city will join us in this function now that it will not be necessary for them to cross town in peak traffic.

The August general meeting took the form of a white elephant night. General business was quickly dispensed with and the meeting handed over to Harold 3AFQ, who, in a brisk manner, disposed of most of the odds and ends available. The meeting closed officially at about 2200 hours, but most stayed on for a rag chew.

Do not forget the September meeting when the agenda item will be "Lasers."

WESTERN ZONE

By the time these notes appear in "A.R." the main item of interest will be the Zone Convention. At the time of writing plans had not been finalised, but I can assure any visitors that they will be most welcome and will enjoy the day. Anyone interested should contact Bill VK3AKW for further information.

Congratulations Lyall 3ASA on announcing your engagement, you must be a busy chap with A.O.C.P. classes going also. Roy Goodwin and Bill 3ZAX are two who are going to these classes, so it looks as if Bill will be losing the Z from his call sign shortly, and Roy was enquiring at the best way of obtaining 700-800 volts from a transformer the other day, so I would suggest that the local chaps fit attenuators to their rx's before Roy gets his ticket.

Hitting on a more serious note, friends of Alan 3HL will be sorry to hear that he has been in Stawell Hospital for some weeks. We all wish you a speedy recovery, Alan.

Herb 3NN, his sister, Garry 3ZOS and Bob 3ARM and family paid us a visit the other Sunday to inspect the new shack. Garry showed us a beautifully built 432 Mc. converter which he has recently completed. Bob has just purchased a new v.f.o. and pi-coupler, so we can expect bigger and better signals from 3ARM's QTH. Bob's XYL has just got a new electronic organ and was practising one night when she heard "VK3ARM calling CQ2" blast forth from the speakers in the organ, I believe he was still calling CQ2 when the XYL stormed into the shack, almost taking the door with her and explained to the OM in a very abrupt manner what had happened and advised him not to let it happen again.

I haven't seen Barry 5YB for some time, guess we will see you at the convention, Barry.

Recent signals heard on 144 Mc. include 3ARM, 3NN, 3ZAX, 3AOS, 3ATN, 3AFU, 5ZDR and Graham 5ZOF, who is teaching at Bordertown High School.

The other Sunday morning Bill 3ZAX's XYL Rhonda and my XYL Jill got going on 144 Mc., fortunately our power supplies are rated for continuous service so we were not worried about that but lunch was about two hours late.

That's the lot for now, see you at the convention. 73, Tony 5ZAI.

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QUEENSLAND

The August Meeting of the Council of the Queensland Division of the Wireless Institute of Australia was held in the Social Services' Club Rooms, Berwick Street, Valley, Brisbane, on Thursday night last. Despite cold weather there was an almost full attendance of Councillors, under the chairmanship of Lawrie VK4ZGL. Much business was disposed of. All sections of the Division are running along smoothly thanks to the effort of Councillors. Another duplicator is to be acquired to make a bigger and better issue of "QTC," the Division's monthly publication.

A quantity of f.m. transmitters and receivers are available ex disposals for ballot and should prove interesting.

The first W.I.C.E.N. exercise, a small-scale one, was held last Sunday. Another exercise on a much larger scale is set down for 29th August.

IPSWICH AND DISTRICT RADIO CLUB

This club is still progressing well. They meet fortnightly and are very keen. The Ipswich City Council have made land available for the Club and it is being cleared and levelled, for the erection of a club house and QTH for the Club's official station, VK4IO.

VK2 DIVISION

SOUTH-WEST ZONE CONVENTION

To be held at

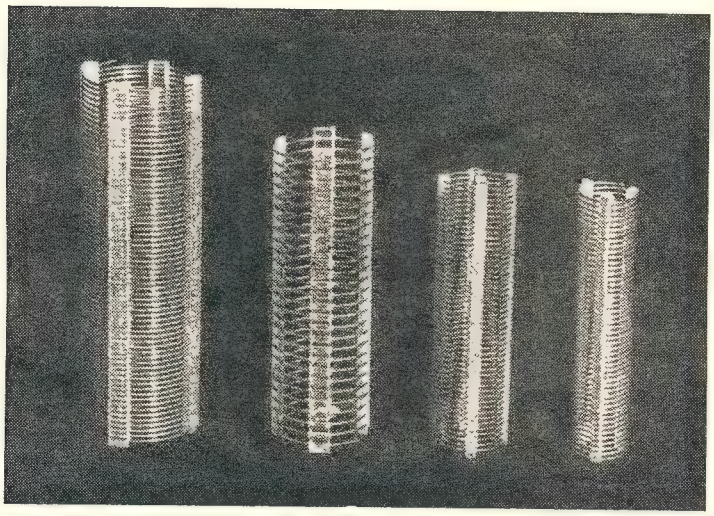
TUMBARUMBA.

2nd, 3rd and 4th OCTOBER

Registrations 15/-. Deposit for accommodation £1. All inquiries and deposits to Trevor Hoodless, VK2ACZ, "Blue Hills," Tumbarumba.

Refer to the N.S.W. Division notes for full details and programme.

AIR-WOUND INDUCTANCES



No.	Diam.	Turns per Inch	Length	B. & W. Equiv.	Price
1-08	½"	8	3"	No. 3002	5/3
1-16	½"	16	3"	No. 3003	5/3
2-08	⅝"	8	3"	No. 3006	6/3
2-16	⅝"	16	3"	No. 3007	6/3
3-08	¾"	8	3"	No. 3010	7/4
3-16	¾"	16	3"	No. 3011	7/4
4-08	1"	8	3"	No. 3014	8/5
4-16	1"	16	3"	No. 3015	8/5
5-08	1¼"	8	4"	No. 3018	10/6
5-16	1¼"	16	4"	No. 3019	10/6
8-10	2"	10	4"	No. 3907	13/9

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References: A.R.R.L. Handbook, 1961; "QST," March 1959; "Amateur Radio," December 1959.

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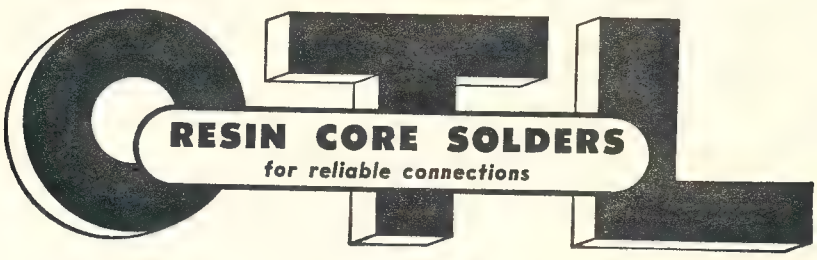

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VK4IO has been taking the six-metre call-backs after the VK4WI News on Sunday morning and this is proving very popular.

So popular was the Club's last 150-mile round tour that they have planned a trip to Mt. Tambourine later this month and the six metre mobiles will sure be out in force that day.

Gus VK4ZIV, a strong club supporter, has been transferred to VK3 land, and has donated his six metre gear to the Club and this will be used as the Official Station.

SUNSHINE STATE CONTEST

The contest was very well supported this year and increased activity on h.f. plus a good deal of v.h.f. activity. All-band winner was Reg VK4VX, h.f. bands winner, Geoff VK4FK, bands winner, Lloyd VK4ZLO, Listener's award, L-4108, Chas. Thorpe.

C.Q. BRANCH

C.Q. branch activity from members has received some impetus with new members acquiring their call signs. There is a good deal of interest and contacts on six metres. In this regard there is Lyle VK4ZLD, Lance VK4ZAZ, Dick VK4ZCK, Charles VK4ZBG, Bob VK4NG, and Doug VK4ZDK. President, VK4FN, sees to it that 80 and 40 mx are well occupied, whilst 20 is the happy hunting ground most of the time for VK4FK, VK4SD and VK4DO, who is active again after some period of ill-health. Joe VK4CL has had some receiver trouble. Silas VK4SC is tackling some s.s.b. transmitter problems.

Arrangements are in hand for a prominent window display and float in the Capricornia Festival, depicting radio gear from 1915 to 1965, a period of 50 years. This will give the branch some good publicity. Again this year there will be active participation in the Jamboree-on-the-Air.

George VK4FK recently enjoyed a visit to the capital and met several of the boys down there, rumour has it a lot of time was spent in disposals stores.

Ken JA7ACM/MM, chief radio operator on a coal ship plying from Japan to Gladstone, is very active and visits Rockhampton when time allows. Hal VK4DO has taken him for a shack crawl to meet most of the local boys. 73, Hal VK4DO.

TOWNSVILLE AND DISTRICT

Nothing much to report since the last time I submitted the notes. Wonder if others are being troubled by the commercial short wave stations, not the c.w. ones, around 14.13, 14.17, 14.21. Ray VK9RH can be a certainty to come up with one of them—apparently does not hear them at his place, while here they take over with the slightest fall in his signal strength.

Visitors to the shack this month were Bill and Betty VK2AVY, working mobile as they toured north. Very sorry that Poley VK7CK did not call on me as we have QSO'ed many a long year. He met John 4DD, also Ted 4EJ. There have been others in the district during this tourist season but as they have not called on the boys, unable to report their movements.

Bert 4LB and Merv 4DV in camp for a fortnight, playing at being soldiers. Basil way up in Cairns, still trying hard to finish the new receiver, reports that not much being heard on the bands outside a few W's, VE and XE. Have heard some VK3's working to Europe but so far unable to hear them here although I watch the frequency very closely when I hear the boys working them. Still hoping for a breakthrough. 73, Bob VK4RW.

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SOUTH AUSTRALIA

The monthly general meeting of the VK5 Division for July was held in the clubrooms to a somewhat below average attendance of members, due no doubt to the cold and wintry conditions existing at this time of the year.

I feel that I should mention the below average attendance, because it at least shows that our usual full house report at meetings are genuine, and an occasional below average attendance report helps to quieten the pangs of jealousy across the border with its attendant suggestion that we hold our meetings in a public telephone box.

The genial VK5 Chairman, Ross 5KF, opened the meeting a shade on the late side, probably in the hope that a few more members might roll up, by asking all present to stand for one minute in silence out of respect to our late member, Ted 5JE, at the conclusion of which the business side of the meeting was conducted, QSL cards were distributed by George 5RX, and the stage was then set for the two lecturettes listed for the night, the first being a talk on his new s.s.b. receiver

constructed by Ron 5KS, and then a description of a moonbounce project by Jeff 5ZP and Colin 5ZHJ.

Ron 5KS is no newcomer to the field of describing receivers or transmitters, as no sooner is one or the other finished and described to the members, than another one is already on the drawing board, or whatever it is that serves him for such a purpose. Beside describing the new receiver, he also had it in person perched on a table for all to look, hear and admire, and all members present realised just how much work and effort had gone into the job. Questions flew thick and fast at the end of the description, which incidentally was heard in a silence which clearly indicated just how interested everybody was in the subject, and should have showed Ron how well the talk went down. A short, practical test of the receiver, its dial mechanism, its stability and flexibility, etc., etc., brought to a conclusion a very entertaining run down on a receiver that reflects great credit on its builder, and the applause that greeted Ron should have made him feel that his contribution to a successful evening was well worth while. At this point Jeff 5ZP took the floor and gave members a technical description of a moonbounce project that is well in hand around the Elizabeth and Gawler areas. This description could well have been lost in a mire of technicalities, but with a skill worthy of a veteran he kept it well down to an understandable level, thus allowing even the veriest tyro in the audience to fully grasp the essentials of moonbounce, and at the same time prepare the ground for a more practical description of the project by Colin 5ZHJ, who apparently taking his cue from Jeff's approach to the subject, then spent quite a time giving a practical, and sometimes humorous, report on the work so far attempted. Both speakers proved to have a solid knowledge of their subject, and an undoubted ability to impart this knowledge by the spoken word, and the applause that greeted the end of their contribution to the evening must also have been gratifying to both. The vote of thanks to the lecturers, ably proposed by Phil 5NN received the applause that the night merited. The meeting closed well past closing time, and as the members wended their way downstairs, the breath of the caretaker's Alsatian could be heard coming in short trousers—sorry—short pants, a fact that caused several members to skip a couple of steps on their way to the exit.

Geoff 5TY the TV type—and chief standover merchant for the "Silver coin collection" at the last general meeting—is wondering just what Tom 5TL will be doing to him when he gets his tower up. Geoff is publicly stating, in his best Federal Councillor manner, that the increase of active stations on the lower frequencies, now that he has qualified for occupation, is not in his best interests. For once—but only for once—I agree with him—a blanket would cover him-5DX-5MM-5HY-5TU-5ZF and 5TL. Fancy all those villains under the one blanket—even my fancy could not imagine that!

Received a short note from Bruce, ex-5MC, under the address of Tennant Creek, to say that he has left Port Pirie and will in future be domiciled in the Northern Territory. He is with Geo-Peko Ltd., as their base maintenance officer at Tennant Creek, and beside five diamond drills, numerous vehicles, trailers, etc., to look after, he will also handle all the radio matters. He will be quite a busy person, and although he is at the moment up there on his own, the XYL Pam and the two harmonics will soon follow. He expects to operate from the new QTH with a VK8 call, all of which is in the hands at the moment of the P.M.G. I bumped into him in town one day whilst he was shopping for the move, and was he in difficulties? He wanted to go one way, one harmonic wanted to go the other way, and the other harmonic did not care very much where he went as long as it was not where anybody else wanted to go. Pam was not in sight, and I don't blame her!

Nobby 5WK spending a few days home on sick leave at the moment of writing—slipped a disc or something—no mention as to whether it was a 45 or a 33-and-a-third—anyway he was not very happy. Just goes to show that these s.s.b. types can't take the strain of a.m. broadcasting, although he nearly slipped another disc when I told him this. A.m. breeds them tough!

I noticed with feelings akin to dismay that 3KT and 3AFU, my contemporaries in VK3 for the magazine, are offering for sale an unsigned "Glossy" 5PS. My feelings of dismay are not for my self, but are for these two misguided youths who in the years to come, when thousands of people will be fighting and clamouring for such a collector's item, will realise how for a mere pittance they cheated themselves perhaps for millions—well anyway—thousands — well — hundreds — well, have it your own way—a large sum of money, just because they failed to realise value when they saw it. Incidentally, I can't say that I am exactly hysterical about the "Glossy" bit, I have been called many things and names, but I feel that this "Glossy" business verges on the point of insult.

I note with envy and disappointment that John 5KX has departed for his business-cum-pleasure jaunt to the U.K. I am somewhat hurt that he should sneak off without letting me carry his bags on the trip. The only explanation I can think of is that he has had a lapse of memory—poor fellow—I hope he remembers to return—with or without his bags!

My favourite Youth Club Leader Ken IKM gave two quotes of the month recently, the first quoted at length and commented upon with gusto, the second being somewhat cryptic and quoted upon not at all, although apparently he has decided to bow to the inevitable by admitting in print that VK5 is always ahead of things. This from Ken is praise indeed, and I hope Council now realise just what a good publicity officer they have in me. Keep up the good work OM, they might even give me a rise yet—an Irishman's rise probably!

Ron 5KS, the lecturer on his new s.s.b. receiver at the meeting, is what is known in journalistic circles as "Good Copy." The reason being that he can always be counted upon to slip into his descriptions of his apparatus a reference as to how he borrowed his XYL's egg-beater for a coil winder, or perhaps her latest baking dish for a chassis. All this is usually said in a tone of "what do I care" and general bravado, which incidentally deceives nobody, least of all Ron, but it makes good reading and all goes to keep up the image of the daredavil radio Amateur who snaps his fingers at XYL's, and always earns cheers and laughter at the meeting. I thought this lecture was going to let me down in this direction, but just at the end, when I had completely given up hope, he announced that the receiver cabinet had been painted with enamel and "baked in mum's oven," ending with the simple statement that "it does not take long for the smell to wear off"! I wish I could meet "mum" and see just what she thinks of such a statement. What about it "mum"—care to put his weights up?

Who was the keen type in VK5 who proudly hoisted his new pair of masts high up in the air, stood back with an air of something well done, and then tripped over his aerial wire, pulley and the hoister-upper wire? For a small fee I am willing to make a search among the records and find out his name. A minimum of 336 applications for the search is required! !

It is sometimes forgotten that the Division has a technical committee which is prepared to advise members on such matters as TVI-BCI and any other forms of mental cruelty. The committee is at your disposal, and if you care to contact Ray 5BT he will fall over backwards to help you, and between you and I, he knows his onions.

Uncle Tom 5TL, better known as the Publications Officer, recently received a letter from an interested purchaser of a book that lists all of the schort—I repeat—schort wave broadcast stations and their addresses. The last I heard of Tom they were still throwing water to bring him around!

Moss 5TU has heard someone conducting a radio chess match, and is quite intrigued. If the aforementioned chess players care to call Moss in on the next game he might be interested in taking it up.

On the day that VK5 beat VK3—Yum-Yum—in fooball—Yum-Yum again—Jack 5JX was heard to say to another local station that he had not been to a football match since he was 14 years of age. It appears that Jack at that tender age was watching a football match from a tree at the Adelaide Oval, and fell out of the tree on to a picket fence, the resultant injuries wiping out all his enthusiasm for football for ever. He even forgot the scores at the moment of impact.

Launce 5LD is reported as having stocked up in R.D. log sheets for the coming contest. Does this mean that we can expect a record score to beat all record scores, or does it just mean that the exhortations of Comps, 5EF-Pro 5PS, have borne fruit. What!—no s.s.b.

Talking of s.s.b—and who would talk of s.s.b. unless paid a fabulous salary like myself—a disciple of mine in Len 5ZF was heard conversing with Keith 5KH on the subject of s.s.b. and definitely appeared interested. Imagine how I felt when I heard him say that he was only trying to promote argument when he adopted his previous attitude. How low can one get? Fancy anyone trying to promote an argument about such a subject — Thank Heavens I am pure!

Periodically in these notes I have advocated holding a meeting once a year devoted entirely to getting to know those one does not know, and spending a little time having a talk to those one does know, but seldom sees for long. This would save the programme organiser one month's worry, and might be quite a success. Naturally, nobody takes any notice of anything that I might advocate, but a little bird—well anyway—a medium-sized bird—tells me that this idea has occurred to a member of Council—and who knows—somethings might come of it. Don't tell Council that I have advocted this for years, they would only mount their umbrage and pedal off into the darkness!

Brian 5BI recently had a long trip—Cowell to Adelaide—Adelaide to Southern Yorke Peninsula—back to Adelaide—and then back to Cowell—all over the week-end—arriving back at his QTH at about 2 a.m. on Monday with rumours of running out of petrol just to liven up the trip. Perhaps the additional load of a boat on a trailer was the cause of this. Anyway, he is either going mobile-marine, or has the urge to fish. Has the "Admiral" heard about this?

Great flutter in the dovecotes, to say nothing of seething indignation and charges that the VK5 convention delegate voted for a motion at the convention to make s.s.b. the only mode of communication by 1966—or words to that effect. The rumour started on 80 mx, among a round-table of VK2's, spread like wildfire, and the further it went the more distorted it became. Not having seen the convention minutes as yet, I make no comment, but it would be well to remember that something along these lines was submitted by a well-known VK5 member as a convention item, read out at a general meeting for ratification, and passed without much comment by those present. This I have checked on and can vouch for, because the gentleman I checked with was present at the convention and was also at the general meeting when the agenda item was submitted. If all this is true, and it was an item submitted by the VK5 Division, how else could the VK5 delegate vote? Shall we wait and see the minutes? The remedy for this sort of thing is simple—don't leave the meeting too early, stay a while after the entertainment and hear the official business of the Division discussed, and then become indignant. I have been doing this for years, that is why Council is always flattering me by calling me "The trouble maker." Me a trouble maker? Well, did you ever?

Talking along these lines, I have for many years tried my utmost to make the pages of my favourite technical magazine printed in VK2, but all to no avail. I did cherish the thought when the "A.R." magazine committee made their classical blunder of 1964-65 and awarded me the Higginbotham Award, that at last my palsy-walsy Pierce 2APQ would relent and give me a brief mention, but no, nothing doing, still the old ignore, and I am now convinced that the only way I can achieve fame and notoriety will be to make the "Forum" my objective! Being such a quiet, modest, unassuming sort of shrinking violet, I feel this somewhat beyond me. Oh well, I can always become a VK2. What's that?—they would not have me—Sez you!

Met Cec. 5BZ the other day and he suggests that he might have to make another trip to the U.K. to talk to his friend over there, because he certainly can't talk to him on the bands these days, not even on c.w. With the thought in mind that John 5KX had sneaked off into the night making for that direction without waiting for me to carry his bags. I immediately made such an offer to Cec., but he did not appear interested, so it seems my trip to the U.K. will have to wait. Hold on, my crystal ball tells me somewhat hazily through the mists that Muriel 2AIA and the OM 2CM are leaving for Europe next year, I wonder—could my dainty figners, plus my elegant arms, be put to the plebian task of carrying their bags, or even going as first footman? Nothing venture—nothing win!

The notes close this month on a tone of sadness. Happening to glance at the sample log sheet in last month's magazine, the listener's log by the way, I was horrified to see that the first sample log submitted contained my call sign, a poor signal report, and indignities of indignities, the mode of operation—s.s.b. Seizing my quill I immediately wrote a stiff letter on cardboard to the VK3 President, complaining of the insult, only to find that further on in the same magazine the VK3 President was none other than Ken 3AFJ—Pincott to me! As I slowly tore up the letter, I could not but think just how harsh fate could be. All of my friends and wellwishers scattered throughout the land naturally wrote or rang up on the telephone to compliment me on "getting with the strength," or to reproach me for letting the a.m. boys down, and naturally Comps 5EF was mentioned. Just think of the future—Pincott, President—Pincott, Publications Committee — Pincott, Pin Pricker—and last but by no means least Pincott, Pooh!

73-de-5PS—PanSy to you.

TASMANIA

Well, another R.D. Contest has come and gone, and if you haven't sent off your log yet you had better get it in the mail tonight. It is not to be postmarked later than the 6th September.

Ian 7ZZ is now established in his new shack (down the back yard) and apparently has it quite comfortable, more so than the verandah anyway, that is if you consider comfort with "on air" time.

Lee 7KC now has a solid state s.s.b. rig on the air, and although I have not heard it myself, I am told it is quite a f.b. sig. Ted 7EJ has a similar unit under construction, and at the time of writing is tossing up whether to have a fully solid state unit of a valve final. Further details when available or when he makes up his mind.

Talking of duck talk, Bob 7OM is now the proud owner of a Japanese s.s.b. rig, and reports indicate it is indeed a very nice piece of equipment, and an excellent performer.

Friend Ted 7EB put in an appearance at the August General Meeting, and looks much better (is that possible) after his three weeks' sojourn in VK3. Hope you continue to stay okay Ten when you get back to work.

Thanks are due to Bob 7KZ for volunteering as a broadcast officer, and no sooner did he offer than he was bunged on. but as a true Amateur he rose to the occasion on the Sunday (had time for breakfast first, too) and did his part in fine style.

Phone call tonight informed me that associate Hugh Hutchinson (think that's right) from Hamilton, is off to Vancouver in early September, may we take this opportunity to wish you all the very best Hugh, hope to see you back here some day.

Enough for this month, but please—don't forget to post that log. 73, Geoff 7ZAS.

NORTH-WEST ZONE

There is an old Chinese proverb, "He that dobs his neighbour in shall have hell fire and brimstone sent down upon his soul in revenge" or something like that anyway. The whole truth of the matter was that yours truly went along to the last annual general meeting with all good intentions but, whether it was the aroma of sausage rolls filtering through from the supper room that did it I will never know, but when the election of officers came up the fact was that not only was I quickly on the job of seconding a proposal to nominate George 7XL as Secretary again, but also dobbed poor old Max 7MX as Treasurer for a further term of office. Thinking that these were two jobs I had managed to wangle out of, when all of a sudden, this bombshell hit me with being landed with this task of zone correspondent—so with a scanty education behind me (I didn't like to let on to the meeting that I left college at the early age of eight years, hardly by that time being able to read or write! !) I will endeavour to do my best for the next twelve months.

The meeting was a huge success. Thirty persons, including visitors, being present—that I can accurately verify because it is my self-imposed task as assistant dishwasher-upper to Ray 7ZRS to prepare supper.

As I said before, George was elected Secretary and Max Treasurer. However, for one moment I thought that I may have done the wrong thing in dobbing Max in because the learned gentleman suddenly hushed the meeting with the sad news that the Treasurer's report was very grim. I thought perhaps that he had embezzled the club funds and was about to make a full confession, but apparently he had thought about that idea once or twice but there just wasn't enough funds in kitty to run off with! So chaps, let's all pull our weight this next year and help the Zone along by paying your 5/- zone fee.

After general business was cleared up with, all members were entertained with some very good films, ably shown by that genius of mechanics, no other than Sid 7SF. One film being the photographing of the surface of the moon by Mariner IV. Anyway, to cut a long story short while the hushed audience had their cake-openers wide open in awe with the last photos of the lunar surface before the moment of impact, a house fly crawled across the screen and a voice in the front row uttered out—I knew it, there is life on Mars after all! !

I didn't have time to lay hidden mikes and don disguises to catch much gossip, but what I heard during supper varied from such conversations about salt encrusted insulators causing band noise in coastal areas—you can't expect a million dollar view and no band noise as well, Max! ! There is a rumour that 7XL is about to purchase a piece of commercial equipment—and that isn't duck talk either or is it? The only news I got from the Burnie end was that Ken 7AI is almost ready for his full flying ticket—we may soon have a mobile airborne signal flying above our midst. Ken 7KH is thinking seriously about radio-controlled golf balls to clinch the coming golf championships next week, while Bob, Winston and Harry Young in the v.h.f. gang are getting ready for the summer DX, which prompts me to ask a very personal question, Harry. My, you have put on condition! I did, too, after I first got invested with ye olde order of the Ball and Chain! !

Well, as I said before, I didn't have time to really bring out any scandal but hope to keep you all posted next month. 73, 7MS.

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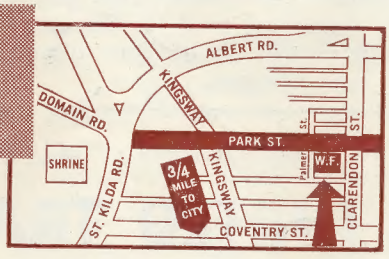

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